MANAGING FINANCIAL RISKS OF SUKUK STRUCTURES

Ali Arsalan Tariq

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I. INTRODUCTION

Debt markets are an integral part of the financial sector and effectively supplement the funds provided by the banking sector. In emerging economies these markets are still at an early stage of their development. Islamic law (*Shari'ah*) prohibits the charging and paying of interest. Therefore, in countries where Muslim population constitutes an important segment of the society, traditional debt markets cannot flourish. Hence there is a high demand and need for developing alternatives to traditional debt markets that can be acceptable to the Islamic law.

As a result, there has recently been a rapid growth of a thriving multi billion dollar market in *Shari'ah* compliant sovereign and corporate Islamic structured financial instruments known as *Sukuk*. In Islamic capital markets, interest rate swaps and other conventional forms of derivative instruments such as credit derivatives and detachable options are not available as Islamic law also prohibits these. Therefore, risk management requirements and considerations for competitiveness should force the *Sukuk* structures to further evolve and offer *Shari'ah* compliant alternatives to traditional derivatives. Without *Sukuk* structures with such depth, the financial markets may not fully develop in many emerging economies.

The objective of this research is to review the evolution of Sukuk markets, describe the Sukuk structures and analyze the various risks underlying the Islamic sovereign and corporate *Sukuk* structures. The paper compares the risk underlying

traditional fixed income instruments and those underlying the *Sukuk* structures. Interest rate swaps and other derivative instruments are utilized to manage the risk of the traditional fixed income instruments. These instruments are not available to Islamic asset managers. The paper therefore, aims to analyze the securitized structures of *Sukuk* and suggest *Shari'ah* compatible frameworks which can replicate the functions of interest rate swaps and derivatives in managing the risks of *Sukuk*.

The research aims to bridge an important gap in these emerging markets: namely, the analysis of risk management mechanisms in *Sukuk* structures. Indeed, due to the very novelty of *Sukuks* themselves there is a relative dearth of comprehensive research studies. Investment banks, governments, corporate clients, researchers and students interested in Islamic finance and banking are hoped to benefit from such studies. There is currently an estimated $4 billion worth of *Sukuks* in issue, with the market rapidly growing. Sovereign issuers include Bahrain, Malaysia, Qatar, and Saxony-Anhalt Germany. There have also been significant corporate Sukuk issues. International banks have also been involved in arranging the issuance. Therefore, this research is of immediate relevance to the Sukuk market and its participants.

The existing literature in the area can be classified into three groups. The first group involves theoretical work which principally deals with the possible alternatives of issuing financial instruments that can be acceptable within the statutory Islamic legal framework. Significant ideas are covered in Ariff and Mannan (1990) and Ahmad and Khan (1997). In addition to prohibiting interest, the Islamic law also prohibits trading under conditions that exhibit excessive uncertainty and ambiguous outcomes (*Gharar*). Keeping in view this injunction, one feels a lack of studies on decision under uncertainty from an Islamic perspective. Al-Suwailem (2000), attempts to deal with this problem by putting forth a suggestive study addressing the

need to differentiate between "gambles", and "decision under uncertainty". It is argued that decisions under uncertainty, as opposed to gambles, imply evaluating the market value of causality such that the value of these causes will offset any potential losses. Also, any extension of financial instruments in an Islamic framework will invariably require a discussion of the Islamic legal requirements. The work of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI, 2002) provides premises for possible testing of such financial instruments to conform to the relevant legal requirements.

The second group of literature comprises of the actual *Sukuk* issuance prospectuses of various corporations (Tabreed UAE 2004, Gutheri Malaysia 2002,) and sovereigns (Malaysia 2001 and Qatar 2003) as well as the Islamic Development Bank (2003). They include summary of the offerings, investment considerations, and terms and conditions of the certificates. As the Sukuk are securitized structures, they also provide a framework for the risk management their risks. These considerations and information form the basis of the research in evaluating the *modus operandi* of *Sukuk* structures and the underlying risks.

The third group of literature deals with alternative forms of fixed income securities and asset management issues. Such literature is pertinent for analyzing the competitiveness of the *Sukuk* framework. For example, Neftci and Santos (2003) provide a synthetic framework that helps to replicate the functions of interest rate swaps and derivatives. Such arrangements utilize the stabilizing role of option features against short term interest rate sensitivity, primarily in emerging markets where interest rate derivatives do not exist. We also explore the possibility of extending such embedded option features for the *Sukuk* structures. Indeed there is a

very wide range of literature on derivatives, which also helps in understanding the subject matter.

The success and popularity of the *Sukuk* framework as an alternative asset management platform will invariably require inbuilt mechanisms which can be instrumental in mitigating risks that exist in the structures due to the benchmarking of Sukuk with market references such as LIBOR. This phenomenon will be investigated in the light of Islamic finance requirements. Also the different structures of the various corporate and sovereign *Sukuks* will be analyzed. Following this will be an exploration of extending the models proposed by Neftci and Santos (2003) to the *Sukuk* structures. Ultimately, the aim is to put forth *Sukuk* structures, which can be competitive without utilizing derivatives.

II. ISLAMIC FINANCIAL ASSETS: OVERVIEW OF THE THEORETICAL ASPECTS

Islamic finance offers an alternative financial paradigm. It is unique in that religious doctrines are avowed in the commercial and financial behaviours, transactions and sectors. The presumption that finance and economics are independent of religious considerations is challenged to the extent that an Islamic financial industry is thriving.

2.1 PROHIBITIONS

The Islamic finance paradigm is based on the following set of *prohibitions:*

i. Transactions in unethical goods and services;

ii. Earning returns from a loan contract (*Riba*/Interest);

iii. Compensation-based restructuring of debts;

iv. Excessive uncertainty in contracts (*Gharar*);

v. Gambling and chance-based games (*Qimar*);

vi. Trading in debt contracts at discount, and;

vii. Forward foreign exchange transactions.

These have important implications for the nature of financial assets, trading in these assets, for the risks of the assets and their mitigation and for management of Islamic financial assets. We need to elaborate on some of these aspects before continuing. The other points will be referred to in the research at appropriate sections.

2.1.1 Prohibition of *Riba* (Interest)

Riba (Interest) is any return/reward or compensation charged on a loan contract as well as charged in rescheduling debts. *Riba* is strongly prohibited in Islam. Muslim scholars and jurists have rigorously discussed the rationale of the prohibition and its alternatives (see, Siddiqi 2004 for more detail). The economic implication is that money is considered as a medium of exchange effectively created to be sought not in itself but for other commodities. Thus, charging interest on loans is considered unjust since money is considered to be simply an intermediary between goods. Recently scholars have also placed increased scrutiny on not only the rationale for the prohibition of interest but also on the lack of theory in support of interest. Mirakhor (1995) provides an overview of recent discussions concerning this theme. He refutes numerous arguments that lend support for the existence of interest as a backbone for conventional financial markets. It is maintained that when money is loaned, the funds are used to create either a debt (in which case there is no warrantable rationale why the lender should accept a return) or an asset (in which case there is no justifiable reason why an unconditional assurance of interest should be imposed by the market).

2.1.2 Prohibition of *Gharar* (Excessive Uncertainty)

There are many strong references in Islam admonitory of aleatory transactions. The main justification is that gambling (*maysir*) invokes enmity among the parties. However, the definition of *Gharar* involves a sense of legal trepidation. Commercial gain in itself is not illicit but one would be hard-pressed to find instances of modern day business that did not involve a sense of uncertainty. Of imminent concern to

Shari'ah scholars and practitioners alike is the scope of uncertainty that transforms commercial gain into unlawful *Gharar*.

Gharar is a by product of uncertainty. In an uncertain world of financial and commercial transaction, the issue becomes how one can take economic initiatives that can be free of G*harar*. There is an inherent lack of studies concerning decisions under uncertainty from an Islamic perspective. Al-Suwailem (2000), attempts to deal with this problem by putting forth a suggestive study addressing the need to differentiate between 'gambles', and 'decision under uncertainty'. It is argued that decisions under uncertainty, as opposed to gambles, imply evaluating the market value of causality such that the value of these causes will offset any potential losses. Gambling is overwhelmingly considered as amounting to *Gharar* since it is a zero-sum game. However, if the situation is such that the players are providing a prize and that there is one 'neutral' player who does not contribute to funding that prize then the arrangement would become *Shari'ah* compliant. The neutral player transforms the arrangement from a 'zero-sum game' into one that is not. This dimension of *Gharar* will be discussed further when discussing the applicability of embedded options and synthetic derivatives within *Sukuk* structures. Similarly, a distinction can be made between gambling and investing in stock markets. Buying a lottery ticket may not be readily comparable to investing in the stock of a company. Whereas in a lottery the participant gains at the ultimate expense of everyone else, in a stock market or any other legitimate trade everybody can be a 'winner' if systemic economic conditions allow it to be so. Therefore, the lottery ticket amounts to a 'zero-sum game' but the stock market or any other legitimate trade does not necessarily.

2.1.3 Avoidance of Unethical Investments and Services

Shari'ah scholars have been unanimous in disapproving of investments in business sectors that may be deemed as 'unethical' such as casinos, tobacco companies, wineries, sex-business etc. Market discipline has transformed these ethical issues into stock screening methods. The screening methods of the Dow Jones and Financial Time's Islamic Markets Indices exemplify this. Muslims consider religion as more than just a prescribed set of rituals. It is a way of life embraced in the wisdom that there is no more comfortable approach to life. Accordingly, the definition of a Muslim is all-encompassing and is reflected by the individual's attitudes outside of places and periods of worship.

2.2 ALTERNATIVE BASIS OF FINANCIAL INSTRUMENTS

The applicability of Islamic financial contracts is unique. Islamic financial instruments not only need to afford the different parties a feasible profit but to do so in a manner compliant with the Islamic law. There are a number of traditional Islamic financial contracts, and through financial engineering new contracts can be designed in compliance with the prohibition of *Riba* and *Gharar*. We provide here a very brief review of these.

2.2.1 Partnership Contracts

In tolerating profits as opposed to interest, Islamic finance allows partnership contracts. There are two principal forms of partnership contracts in Islamic finance that also employ the principles of profit/loss sharing. These are: 1) *Mudarabah*, and 2) *Musharakah*.

Mudarabah: This form of a contract is structured between the supplier of capital and the entrepreneur who services it. One party supplies the capital to a second entrepreneurial party (*mudarib*) for the procession of some trade on the condition that the resulting profits are distributed in mutually agreed proportions while all capital loss is borne on the provider of the capital. In case of loss, the entrepreneur bears the brunt of the opportunity cost of time and labour.

It is argued that *mudarabah* offers functions comparable to interest. It offers the opportunity of pure finance in the sense that the owner of the capital can invest without having to personally manage the capital investment and without having to be exposed to infinite liabilities. However, *mudarabah* (and *musharakah*) are distinct from interest in that they maintain a fair balance between the owner of the capital and the entrepreneur who implements it. Distribution of profits is agreed according to a pre-determined proportion of the total and each party only loses what they put into the investment, be it capital or manpower.

> *It is important to note that in mudarabah and musharakah the principal amount of funds and a fixed profit cannot be guaranteed.*

The predominant manifestation of *Mudarabah* is the 'two-tier *Mudarabah*' model. The *first tier* (liability side) is formed when depositors place their funds with an Islamic financial institution which takes up the role of the *mudarib. Mudharabah* in fact is the investment deposits in Islamic banks. The bank then invests these deposits with entrepreneurs in the *second tier* (asset side) when the bank acts as the capital investor. Islamic financial institutions' profits arise from a percentage of the returns from the *second-tier mudarabahs*. In practice however, on the deposit side *mudarabah* is dominant in the form of investment deposits, but on the asset side,

instead of muharabah Islamic banks assets are in the form of debt receivables from *Murabahah*, *Istisna'* etc.

Musharakah*:* The meaning of the Arabic word *musharakah* is derived from the word *sharikah* meaning partnership. A *musharakah* contract is very similar to the conventional sense of a partnership arrangement where each party contributes capital in their specific capacity and each partner has management rights in proportion to their investment. However, the share of profit for each partner is determined as a proportion of the final total profit rather than a ratio of capital invested. In the event of a loss, each partner is obliged to lose only the amount invested in the project. Within the premise of *Musharakah* there are two forms that Islamic financial institutions assume in the equity of companies.

Permanent Musharakah: The bank partakes in the equity of a company and accepts an annual share of the profits on a pro rata basis. If the company is incorporated, this ownership is the common stock, if the company is not incorporated and is privately held this ownership is the share. In Islamic banks this *Musharakah* is the capital of the bank.

Diminishing Musharakah: This is a distinctive form of *Musharakah* which eventually concludes in the ownership of the asset or the project by the client. Hence it is a temporary and similar to redeemable equity in a company.

Mudarabah and *Musharakah* are non-debt creating modes of financing. The principal amount of finance is not guaranteed. Therefore, the entrepreneur is not required to pay back the total amount of financing, nor is (s)he required to pay a fixed amount of profit. However, (s)he rather agrees to pay a pre-determined proportion of total profits. Khan (1991) argues that *Mudarabah* and *Musharakha* are appropriate

financial tools for the banking system with two major advantages. Firstly, they are consistent with banks' roles as financial intermediaries. Secondly, these tools can be employed for different periods of investment and with a diversity of entrepreneurs.

However, in practice the *Mudarabah* arrangements have a drawback in that moral hazard and asymmetric information become serious in the arrangement. A trustworthy entrepreneur is the cornerstone of the *Mudarabah* arrangement. Consequently, the fact that the bank or investor bears all the loss of the investment in the event of failure may encourage the entrepreneur to behave against the interests of the investor. As a result, investors may be averted from making large investments with a single entrepreneur. The *Musharakah* arrangement may help offset these disadvantages of information asymmetries because of the provision for management control to the investors.

2.2.2 Exchange Contracts

Working capital financing is a keystone of every financial system. Apart from the religious and cultural discrepancies between different nations, financial institutions throughout diverse modern civilizations face similar business challenges. These include maintaining adequate capital ratios, financing inventories, fixed assets, and extending credit sales. A study of Islamic finance usually necessitates an analysis of what implications the religious rulings have on the operations of functioning financial institutions.

Islamic financial institutions are not allowed to extend lines of credit that bear interest receivables. Consequently, other avenues of working capital financing are required and these are found in exchange contracts. These modes of contract do not

entail intermediary relationships such as the partnership engagements discussed previously. The predominant form of an exchange contract is by the *deferred trading principle (DTP)*. Three predominant forms of DTP contracts arise and these can be classified as: 1) Price deferred sale, 2) Object Deferred sale and 3) Object *and* price deferred sale.

A. Price Deferred Sale: If the buyer is in need of finance, (s)he can buy from a seller on credit and defer the payment of price for a future date agreed with the seller. The deferred price can be higher than the spot price. This type of debt finance is allowed in the *Shari'ah* and in fact is the backbone of contemporary Islamic financing.

The primary manifestation of a price deferred sale is the *Murabaha* contract. *Murabaha* has grown to become one of the most popular Islamic financing techniques and is estimated that 70 to 80 percent of total Islamic financing is afforded by this arrangement.[1] The structure of the *Murabaha* contract is relatively straightforward and is comprised of a declared mark-up integrated into the selling price. To illustrate, a constructer may need to fund the purchase of equipment worth $50,000. He can approach an Islamic financial institution to purchase the equipment for him and in turn buy it from the Islamic bank at a deferred price delayed for 6 months. The final sale price may be $60,000 depending on the mark-up employed that would be in relation to a market reference and would include any associated transaction costs as well as a target profit margin.

Murabaha financing has numerous advantages that make it a very popular instrument with Islamic financial institutions. The risk bearing period for the bank is shorter than other financing techniques and the institution also identifies its profit as soon as the sale-purchase transaction is complete. The financier's assets are

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[1] See Ahmed (1993)

receivables (debts) that cannot be sold according to the *Shari'ah*. Of impending concern for Islamic banks is therefore, the liquidity of investments.

B. Object Deferred Sale: If the buyer has funds available at hand or if the seller needs to finance his production and supply, the buyer can pay in advance and receiving the goods will be deferred for a future date. The price paid in advance can be less than the expected future price at the delivery time.

Under this form of contract (*Salam*), the bank agrees to pay the price of an agreed upon quantity of a commodity in advance, delivering the commodity at a future date. An inherent risk in this arrangement is that the bank may not be able to sell the goods at that future date should the counterparty backtrack on his promise. Because of this risk posed to the bank, Islamic banks rarely enter into a *Salam* contract if there is no third-party guarantee. Pricing a *Salam* contract is also more intricate than a *Murabaha* contract and involves accounting for the credit risk of the buyer and expected change in value of asset over the time of the contract. If the contract spans over different countries, the bank will also have to add a discount or premium taking into consideration the forward exchange rate between the different countries.

C. Object and Price Deferred Sale: As a general rule it is not allowed to defer both object and its price. However, in modern times scholars have given highly important exemptions where price and object both can be deferred. This provides us with the two most powerful tools of Islamic finance. The first is '*Ijara* in obligation'. *Ijara* (leasing) is a special case of exchange contracts. It can follow both object deferred and price deferred routes, whichever may be suitably designed. It can also be that an *Ijara* in Obligation means a rentable asset may not exist but a rent contract for it can be implemented. For example, an apartment may not exist and is to be constructed

after two years. It can be rented now for 7 years. The rents can either be received now or later. If the rents are received later, perhaps after the 7 years lease period, it means that both the rent (price) and the apartment (object) are deferred. The apartment in question can be sub-let, that is the rent contract (the usufructs) sold to a third or fourth person. The second example of object and price deferred sale is *Istisna'* where the project, road, etc. does not exist and needs to be constructed and delivered in the future. The price in this case can also be paid in later. Hence, both object and its price are deferred.

2.2.3 Financial Assets

From the above premises and contract forms the following Islamic financial assets are derived. We classify these in accordance with their <u>tradability</u> on the secondary markets.

A. Tradable Islamic financial assets:

a) *Mudarabah* certificates: Certificates of <u>permanent</u> ownership in a company and businesses <u>without</u> control and management rights.

b) *Musharakah* certificates: Certificates of <u>permanent</u> ownership in companies and businesses <u>with</u> control and management rights.

c) Redeemable *Musharakah* certificates (*Musharakah* term finance certificates; MTFCs): Certificates of <u>temporary</u> ownership in businesses and companies <u>with/without</u> control and management rights.

d) Fixed rate *Ijara* certificates: Ownership of durable assets given on rent and/or ownership of usufructs of durable assets. Rent is fixed for the period of the contract.

e) Floating rate *Ijara* certificates: Ownership of durable assets given on rent and/or ownership of usufructs of durable assets. The rent is re-priced periodically in accordance with movements of a specified benchmark in the framework of a Master *Ijara* Agreement.

B. Non-tradable zero-coupon certificates:

a) *Istisna'* and/or *Murabaha* certificates: The ownership of debt arising from an *Istisna'* and/or *Murabaha* financing. For example, construction of a road project is carried out on the basis of a cost plus arrangement where the cost is $100 million and the mark-up rate is 10%. The $110 millions will be paid back in instalments without differentiating the principal and coupons. The $110 million can be in the form of non-tradable debt certificates that are similar to zero-coupon bonds in some of its features. Debt cannot be traded in Islamic law[2]. Therefore, these certificates are not tradable.

b) *Salam* certificates: In *salam*, funds are paid in advance and the commodity becomes debt. The funds paid can also be in the form of certificates representing the debt. These certificates are also non-tradable.

[2] It is noticeable that in *Malaysian domestic markets* this rule does not hold. The Malaysian domestic Islamic debt certificates are tradable in the secondary markets. These instruments accounted for 7% of total bonds raised in 1999, but grew to 36% in 2001 as a result of greater investor awareness of alternative funding sources. About 50% of all Malaysian domestic bonds, mostly the larger issues, were now based on Murabahah and Istisna' (Bai Bi thaman Ajjil – BBA or deferred sale). However, the Malaysian position is not acceptable in international markets and hence Malaysian international issues are not based on the BBA.

III.

EVOLUTION AND PROFILE OF SUKUK STRUCTURES AND MARKETS

Generally, *Sukuk* are asset-backed, stable income, tradable and *Shari'ah* compatible trust certificates. The primary condition of issuance of *Sukuk* is the existence of assets on the balance sheet of the government, the monetary authority, the corporate body, the banking and financial institution or any entity which wants to mobilize the financial resources. The identification of suitable assets is the first, and arguably most integral, step in the process of issuing *Sukuk* certificates. *Shari'ah* considerations dictate that the pool of assets should not solely be comprised of debts from Islamic financial contracts (e.g. *Murabaha*, *Istisna*).

3.1 TYPES OF SUKUK

The proper classification of the asset classes will also determine the type of certificates to be issued. It is imperative to note that these assets can be prepared for the issuance of trust certificates in a number of ways conditional to the need of the issuing entity.

3.1.1 Pure Ijarah Sukuk

These certificates are issued on stand-alone assets identified on the balance sheet. The assets can be parcels of land to be leased or leased equipment such as

aircrafts and ships. The rental rates of returns on these *Sukuk* can be both fixed and floating depending on the particular originator.

3.1.2 Hybrid/Pooled Sukuk

The underlying pool of assets can comprise of *Istisna'*, *Murabahah* receivables as well as *Ijarah*. Indeed, having a portfolio of assets comprising of different classes allows for a greater mobilization of funds as previously inaccessible *Murabaha* and *Istisna* assets can comprise a portfolio. However, still at least 51 percent of the pool must comprise of *Ijarah* assets. Due to the fact the *Murabahah* and *Istisna'* receivables are part of the pool, the return on these certificates can only be a pre-determined fixed rate of return.

3.1.3 Variable Rate Redeemable Sukuk

The above mentioned two types of *Sukuk* would partially represent the strength of the issuer's balance sheet. Under some conditions, implementing *Sukuk* by representing the full strength of an issuer's balance sheet can prove to be beneficial. Already, several corporate entities refer to these *Sukuk* as *Musharakah Term Finance Certificates* (MTFCs). This can be considered as an alternative to *Sukuk* because of its seniority to the issuer's equity, its redeeming nature and its relatively stable rate as compared to dividend payouts. MTFCs have a few advantages. First, employing *Musharakah* returns is preferred from the viewpoint of jurists as such an arrangement would strengthen the paradigm of Islamic banking that considers partnership contracts as the embodiment of core ideals. Secondly, the floating rate of return on these

certificates would not depend on benchmarking with market references such as LIBOR but would instead be contingent on the firm's balance sheet actualities.

3.1.4 Zero-coupon non-tradable Sukuk

Another possible classification of *Sukuk* structures can be created where the assets to be mobilized do not exist yet. Consequently, the objective of the fund mobilization would be to create more assets on the balance sheet of company through Istisna'. However, certificates of this nature would not readily be tradable because of *Shari'ah* restrictions. The primary asset pools to be generated would be of the nature warranted by *Istisna* and instalment purchase/sale contracts that would create debt obligations. The certificate on these debt arrangements can be termed as *fixed rate zero coupon Sukuk*.

3.1.5 Embedded Sukuk

These could be Sukuk whether zero-coupon, pure-Ijara or hybrid, with the embedded option to convert into other asset forms depending on specified conditions.

3.1.6 Expanded List of Sukuk

In response to the emergence of interest in issuances of Islamic asset-backed financial instruments, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) released an exposure draft of its *Shari'ah standards concerning Sukuk* in November 2002. According to the exposure draft: "Investment *Sukuk* are certificates of equal value representing, after closing subscription, receipt of the value

of the certificates and putting it to use as planned, common title to shares and rights in tangible assets, usufructs, and services, or equity of a given project or equity of a special investment activity." *Exposure Draft of AAOIFI Shari'ah Standard No. 18, p.4.*

The salient features of the different types of investment Sukuk identified in the exposure draft are summarized in the tables below. Firstly, there are certificates of ownership in leased assets.

Types of Investment *Sukuk*	**Description of Investment *Sukuk***	***Shariah* rulings and requirements**
1. **Certificates of ownership in leased assets**	These are certificates that carry equal value and are issued either by the owner of a leased asset or an asset to be leased by promise, or by his financial agent, the aim of which is to sell the asset and recover its value from subscription, in which case the holders of the certificates become owners of the assets.	**Issuer:** sells a leased asset or an asset to be leased on promise. **Subscribers are:** The subscribers are buyers of the asset. **Mobilized Funds:** are the purchase price of the asset **Certificate Holders:** become the owners of the assets jointly with its benefits and risks.

Table 1: Certificate of Ownership on Leased Assets
Adapted from AAOIFI Sukuk Exposure Draft, November 2002

Also, the draft discusses the viability of certificates of ownership in usufructs.

2. **Certificates of ownership of usufructs**	These certificates have various types, including the following:	
2.A. **Certificates of ownership of usufructs of existing assets**	These are documents of equal value that are issued either by the owner of usufruct of an existing asset or a financial intermediary acting on the owner's behalf, with the aim of leasing or subleasing this asset and receive rental from the revenue of subscription. In this case, the holders of the certificates become owners of the usufruct of the asset.	**Issuer:** sells usufruct of an existing asset. **Subscribers are:** buyers of the usufructs **Mobilized Funds:** are the purchase price of the usufructs **Certificate Holders**: become the owners of the usufructs jointly with its benefits and risks.
2.B. **Certificates of ownership of usufructs to be made available in the future as per description**	These are documents of equal value issued for the sake of leasing assets that the lessor is liable to provide in the future whereby the rental is recovered from the subscription income, in which case the holders of the certificates become owners of the usufruct of these future assets.	**Issuer:** sells usufruct of an asset to be made available in the future as per specification **Subscribers are:** buyers of the usufructs. **Mobilized Funds:** from subscription are the purchase price of the usufructs. **Certificate Holders:** become the owners of the usufructs jointly with its benefits and risks

Table 2: Certificates of ownership in usufructs

Following that is an outline of the applicability of certificates of ownership of services of a specified supplier or of services to be made available in the future.

3. **Certificates of ownership of services of a specified supplier**	These are documents of equal value issued for the sake of providing or selling services through a specified supplier (such as educational programmes in a nominated university) and obtaining the value in the form of subscription income, in which case the holders of the certificates become owners of the services.	**Issuer:** sells services. **Subscribers are:** buyers of the services. **Mobilized Funds:** are the purchase price of the services. **Certificate Holders:** are entitled to sell all types of usufructs in addition to the funds of reselling such usufructs.
4. **Certificates of ownership of services to be made available in the future as per description**	These are documents of equal value issued for the sake of providing or selling services through non-existing supplier with the description of the subject matter (such as educational programs of a specific quality, schedule, duration, etc. without mentioning the educational institution) and obtaining the value in the form of subscription income, in which case the holders of the certificates become owners of the services.	

Table 3: certificates of ownership of services of a specified supplier or of services to be made available in the future

Furthermore, the draft continues to outline the specifics pertaining to certificates on *Salam, Istisnaa and Murabaha* contracts before discussing the applicability of certificates on *participation contracts*.

Table 4: Salam, Istisnaa and Murabaha contracts

5. *Salam* certificates	These are documents of equal value issued for the sake of mobilizing *Salam* capital and the items to be delivered on *Salam* basis are owned by the certificate holders.	**Issuer:** sells *Salam* commodity **Subscribers are:** buyers of that commodity. **Mobilized Funds:** are the purchase price of the commodity, which the *Salam* capital. **Certificate Holders:** are entitled to the *Salam* commodity, the selling price or the price of selling the on parallel *Salam* basis, if any.
6. Istisnaa certificates	These are documents that carry equal value and are issued with the aim of mobilising the funds required for producing a certain item and the items to be produced on Istisnaa basis are owned by the certificate holders.	**Issuer:** is the manufacturer (supplier). **Subscribers are:** the buyers of the item to be produced **Mobilized Funds:** are the cost of the item **Certificate Holders:** are entitled to the item or the selling price of the manufactured item.
7. Murabahah certificates	These are documents of equal value issued for the purpose of financing the Murabahah commodity and the certificate holders become the owners of the Murabahah commodity.	**Issuer sells:** Murabahah commodity **Subscribers are:** the buyers of that commodity **Mobilized Funds:** are the purchasing cost of the commodity **Certificate Holders:** owns the Murabahah commodity or the price of selling it.

8. Participation certificates	These are documents of equal value issued with the aim of using the mobilised funds for establishing a new project or developing an existing one or financing a business activity on the basis of one of partnership contracts. The certificate holders become the owners of the project or the assets of the activity as per their respective shares. The participation certificates may be managed on the basis of Musharakah or Mudarabah or through an investment agent.	
8.A. Participation certificates managed on the basis of Musharakah contract	These are documents representing projects or activities that are managed on the basis of Musharakah by appointing either one of the parties or any other party to manage the operation.	**Issuer:** is the inviter to a partnership in a specific project or activity **Subscribers are:** the partners in the Musharakah contract **Mobilized Funds:** are the share contribution of the subscribers in the Musharakah capital **Certificate Holders:** own the assets of partnership and are entitled to profit, if any
8.B. Participation certificates managed on the basis of Mudarabah contract	These are documents that represent projects or activities that are managed on the basis of Mudarabah by appointing mudarib for management.	**Issuer:** is the Mudarib **Subscribers are:** the capital owners **Mobilized Funds:** are the Mudarabah capital **Certificate Holders:** own the assets of Mudarabah operation and profit share as per agreement. The certificate holders, being the capital providers, bear the loss, if any.
8.C. Participation certificates managed on the basis of investment agency	These are documents that represent projects or activities that are managed on the basis of investment agency by appointing an agent to manage the operation on behalf of the certificate holders.	**Issuer:** is an investment agent. **Subscribers are:** the principals **Mobilized Funds:** are the subject matter of investment **Certificate Holders:** own the assets represented by the certificates with its risks.

Table 5: Participation Certificates

Finally, the exposure draft outlines the features of the different agricultural oriented certificates as well as *concession certificates*.

9. Muzara'a (sharecropping) certificates	These are documents of equal value issued for the sake of using the mobilized funds in financing a Muzara'a contract. The certificate holders become entitled to a share in the crop as per agreement.	**Issuer:** is the landlord **Subscribers are:** farmers who invest on the basis of Muzara'a contract. **Mobilized Funds:** are the cultivation cost. **Certificate Holders:** are entitled to a share of the produce of the land as per agreement.
10. Musaqa (irrigation) certificates	These are documents of equal value issued on the basis of a Musaqa contract for the sake of using the mobilized funds for irrigating trees that produce fruits and meeting other expenses relating to maintenance of the trees. The certificate holders become entitled to a share in the crop as per agreement.	**Issuer:** is the owner of the land that consist of trees **Subscribers are:** those who assume the irrigation process on the basis of Musaqah contract. **Mobilized Funds:** stand as the maintaining cost of the trees. **Certificate Holders:** are entitled to a share in the produce of the trees as per agreement.
11. Mugarasa (agricultural) certificates	These are documents of equal value issued on the basis of a Mugarasa contract for the sake of using the mobilized funds for planting trees and meeting expenses of the work. The certificate holders become entitled to a share in the land and the plantation.	**Issuer:** is the owner of land that is suitable for planting trees. **Subscribers are:** those who assume the agricultural or horticultural process on the basis of Mugarasa contract. **Mobilized Funds:** stand as cost of maintaining the plantation. **Certificate Holders:** are entitled to a share in both the land and trees as per agreement.
12. Concession certificates	These are documents of equal value that are issued for the sake of using the mobilized funds to finance execution of a concession offer in which case the certificate holders become entitled to rights associated with the concession.	

Table 6: Agricultural Oriented and Concession Certificates

3.2 RECENT DEVELOPMENTS IN SUKUK MARKETS

The Sukuk market has emerged during the previous three years, first Bahrain issuing domestic sovereign fixed-rate Ijara and Salam Sukuk. It was followed by the issuance of floating rate Ijara Sukuk as well as pooled Sukuk by both corporate bodies and sovereigns in several countries. These *Sukuk* are based on *Salam*, *Ijarah*, Istisna, Istisna-cum-*Ijarah* and on the basis of pooled portfolios. We discuss some examples of the *Ijarah Sukuk* and pooled portfolio securitization.

The present size of the market of the Sukuk is estimated to be over 4 billion dollars growing at rate more than 90%. This estimate does not include the amount of the Malaysian domestic Islamic debt issues and the Bahraini Salam Sukuk issues. The Salam Sukuk of Bahrain are monthly issues and are non-tradable. So far 40 issues of these Salam Sukuk have been made each one oversubscribed. The most prominent Sukuk issues are listed in Table-7. Indeed, the largest issuance as of this writing is the $750 million mandate awarded to Dubai Islamic Bank in June 2004 by the Department of Civil Aviation (DCA), UAE, to raise funding for the expansion of the Dubai International Airport. The relatively low number of issues had inhibited overall liquidity in the markets as investors were inclined to hold on to their investments. With the growing number of larger corporate issues being listed, however, *Sukuk* secondary markets can look forward to increased trading and activity. We present here the description of some issuances.

Table-7: Most Prominent Sukuk Issues

Name of Ijara Sukuk	Type	Amount	Maturity	Pricing
Malaysian Global First	Guthrie Co., (plantation company)	US$ 150M	5 years	Floating reference rate on underlying *Ijarah*
Malaysian Global Ijara Sukuk	Sovereign	US$ 500M	7 years	Floating reference rate on underlying *Ijarah*
Qatar Global Ijara Sukuk	Sovereign	US$ 700M	7 years	Floating reference rate on underlying *Ijarah*
Tabreed Global Ijara Sukuk	Corporate	US$ 150M	5 years	Floating reference rate on underlying *Ijarah*
Sukuk Al Intifaa Makkah	Corporate	US$ 390 M	24 years	Sale of usufruct rights as weekly time shares
Ijara Sukuk Saxony-Anhalt Germany	Sovereign	Euro 100M	5 years	Floating reference rate on underlying *Ijarah*
Dubai Department of Civil Aviation (DCA) Ijara Sukuk	Corporate	US$ 750 M	5 years	Floating rate reference rate on underlying *Ijarah*
Sitara Musharakah Term Finance	Corporate	Pak Rupees 360 M	5 years	Fixed rate on profits
Sudanese Government Investment Sukuk	Sovereign	Sudanese Dinar 6 billion	2 years	Fixed rate on profits
Solidarity Trust Certificates IDB	Corporate	US$ 400 M	5 years	Fixed rate return
Bahrain Monetary Agency (BMA)	Sovereign	US$ 100	5	Fixed
BMA	Sovereign	US$ 70	5	Fixed
BMA	Sovereign	US$ 80	3	Fixed
BMA	Sovereign	US$ 50	5	Fixed
BMA	Sovereign	US$ 80	3	Fixed
BMA	Sovereign	US$ 100	3	Fixed
BMA	Sovereign	US$ 250	5	Fixed
BMA	Sovereign	US$ 200	5	Floating rate reference
BMA	Sovereign	US$ 40	10	Fixed

Source: Calculated from various sources

3.3 CASES: IJARA: SOVEREIGN SUKUKS

3.3.1. Qatar:

Qatar Global Sukuk QSC was incorporated as a joint stock company in Doha during October 2003, established as a joint-venture special purpose vehicle (SPV) by the government of Qatar, Qatar International Islamic Bank (QIIB) and HSBC. On 8th October, 2003 the government of Qatar issued U.S. $700 million worth of Trust Certificates (*Sukuk*) due 2010. The proceeds from this issuance were utilized to finance the construction and development of the Hamad Medical City located in Doha, Qatar.

Each certificate holder has an undivided *beneficiary right* to the *land parcel* (which is the medical complex) between October 2003 and 2010. Under the arrangement, the SPV buys the parcels from the government of Qatar and re-sells them to the buyers of the issues. It does so by buying the beneficiary rights and keeping them as a trust and issuing trust certificates (known as *sukuk*) to the investors. The distribution dates are the ninth day of every April and October. The periodic distributions are floating rate which are calculated for the first four distribution dates using the equation:

(LIBOR for the return accumulation period plus margin of 0.4%) x ($700 M) x (number of days in return accumulation period/360)

After the first four distribution dates, the periodic distribution is calculated as:

Amortization Payment + (LIBOR for such return accumulation period plus margin of 0.4%) x ($700 M) x (number of days in return accumulation period/360)

The SPV, on behalf of the investor, leases the land parcel back to the government of Qatar in conformity with the Master *Ijarah* Agreement. Under the terms of the agreement between the issuer (lessor) and government (lessee) the rental payments will be calculated semi-annually (in April and October) with reference to LIBOR plus the margin, and will equal the periodic distribution amounts payable on the respective dates. These rental payments are equivalent to the semi-annual distribution funds. The returns are guaranteed by the government of Qatar, and thus replicate floating rate Qatari sovereign debt instruments. The certificates were rated A+ by Standard & Poor's (S&P) and applications were proposed to be made to list the issuances on both the Luxembourg Stock Exchange and the Labuan International Financial exchange (Malaysia).

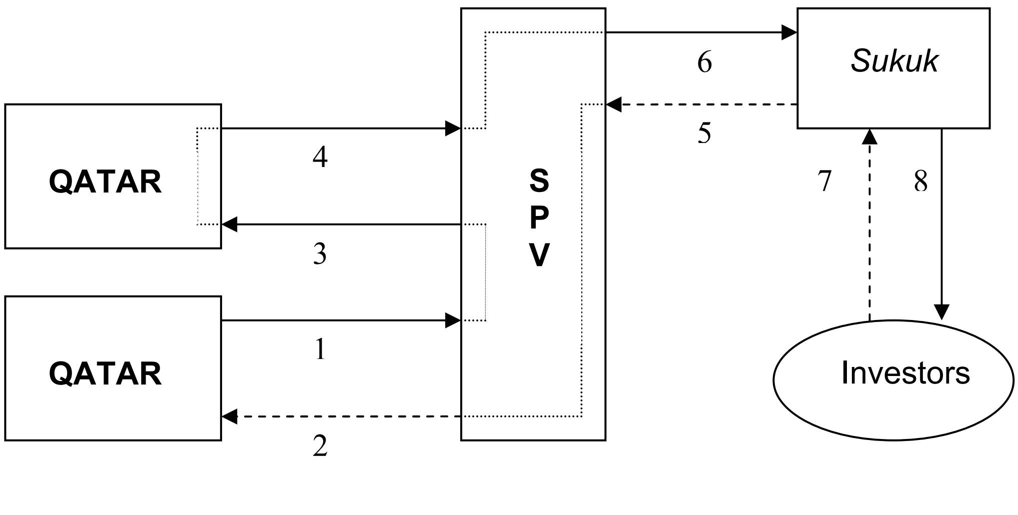


Figure 1: The Qatar Sovereign *Ijarah Sukuk* Structure

- The government of Qatar sells land parcels valued at U.S. $ 700 M
- The purchase price is U.S. $ 700 M
- The SPV leases out the land parcels back to the government of Qatar
- The government of Qatar pays semi-annual lease rentals
- The SPV disburses semi-annual distribution payments equal to the government's rental payments.
- Investors (both Islamic and conventional) secure the *sukuk* issuances.
- The investors are reimbursed periodically by the distributions from the SPV funded by the government rental payments on the land parcels.

3.3.2. Malaysia:

Malaysia Global Sukuk was incorporated in Labuan, Malaysia as a special-purpose vehicle solely for the purpose of participating in the *Sukuk* issuance transactions. On July 3, 2002, the government of Malaysia issued trust certificates worth U.S. $ 600 M that were due in 2007. Each of the trust certificates represents an undivided beneficial ownership of the trust assets that are the land parcels. The proceeds from the issuances were implemented to develop the land parcels that consisted of four areas of construction:

- Selayang Hospital, a government owned hospital operated by the Ministry of Health.
- Tengku Ampuan Rahimah Hospital, a government owned hospital operated by the Ministry of Health
- Government living headquarters in Jalan Duta

- Jalan Duta Government Office Complex (including Ministry of Finance, Ministry of International Trade and Industry, and Inland Revenue Board offices)

The general structure of the *Sukuk* issuances is similar to the Qatar trust certificates. An SPV is created to buy the land parcels from the government (that is funded by both Islamic and conventional investors) which are then leased back to the government that pays out rental payments matching the semi-annual distribution amounts to the *Sukuks*. Indeed, this is the generic arrangement of *Ijarah Sukuk* issuances.

Under the framework of the Malaysian prospectus, the “master Ijarah” agreement would entitle the government to distribute semi-annual lease payments in reference to LIBOR + 0.95% that would exactly match the distributions to the *Sukuk* holders. After the expiry of the agreement in 2007, the government will buy back the properties at face value effectively protecting the bond issue from any variations in the value of the underlying assets.

The rental return is guaranteed by the government of Malaysia, and the trust certificates are thus equivalent to floating Malaysian sovereign debt instruments. The certificates were rated “Baa2” by Moody’s Investor Services and “BBB” by Standard & Poor’s Rating services. The lead manager of the issuance was HSBC and the co-managers included ABC Islamic Bank, Abu Dhabi Islamic Bank, Bank Islam, Dubai Islamic Bank, Islamic Development Bank, Maybank International and Standard Chartered Bank. As with the Qatar prospectus, applications were made to list the certificates on the Luxembourg Stock Exchange and the Labuan Financial Exchange.

3.3.3 Ijarah Corporate Sukuks: Gutherie

The Serial Islamic Lease Sukuk issuance by First Global Sukuk in partnership with certain Malaysian subsidiaries of Kumpulan Gutherie provides an interesting case study of an alternative structure for *Ijarah Sukuks.* The arrangement implemented different 'series' of *Sukuks* (similar to conventional securitization tranches) as well as call and put options. Furthermore, the fact that the seller is a corporate rather than government means that there are numerous varying risk considerations to explicate.

First Global Sukuk is an SPV incorporated in Labuan, Malaysia specifically for the purpose of this particular *Sukuk* arrangement. On December 24, 2001 Gutherie issued trust certificates in two series (Series A and Series B) with a total value of U.S. $ 150 M. Series A comprised of U.S. $ 50 M of certificates due in 2004, and the remaining U.S. $ 100 M were incorporated in Series B due in 2006. The distinctions between Series A and Series B *Sukuk* are in the land parcels, the different sellers (various subsidiaries of Gutherie), the semi-annual returns, ownership interests and the terms to maturity.

Table 8: Differences between Gutherie *Sukuk* Series

	Series A	**Series B**
Denominations	$500,000	$500,000
Due Dates	December 2004	December 2006
Sellers	Kumpulan Jerai Sdn Bhd	Kumpulan Linggi Sdn Bhd **and** Kumpulan Kamuning Sdn Bhd
Semi Annual Returns	LIBOR + 1.5 % per annum for the principal amount of Series A *Sukuks* held by investor	LIBOR + 2.0 % per annum for the principal amount of Series B *Sukuks* held by investor.
Ownership Interest	1.0% undivided ownership interest in Series A Trust Assets	0.5% undivided ownership interest in Series B Trust Assets

The arrangement has provisions for Gutherie and its subsidiaries to be able to issue further *Sukuks* on other land parcels. Distributions on such further issuances will be derived from Gutherie's payments under the relevant lease agreements with the SPV. Additional trusts will have to be created for this additional certificates but it has been estimated that the total value of future issuances would not exceed U.S. $ 245,000,000.

The lease arrangements also have stipulations involving the utilization of call and put options. The put option allows the SPV, on behalf of the holders of the trust certificates, to require Gutherie to purchase the beneficial interest in the related land parcels. The purchase price would be equal to the principal amount on such series of *Sukuk* plus the aggregate periodic distribution amount payable on the *Sukuk* on the date of such redemption. This option can be exercised on the periodic distribution date immediately following the occurrence of a dissolution event and on any scheduled dissolution date. Conversely, the lease agreements also afford Gutherie a call option whereby Gutherie can require the SPV to sell the beneficial interests in the land

parcels back to it on the related scheduled dissolution date at the associated dissolution distribution amount.

Given that Gutherie is a commercial enterprise operating in a region with a history of economic vulnerability, its financial statements and returns projections are under greater scrutiny. There are several covenants that the company has agreed to under the terms of the arrangement and these include:

- To maintain a Gearing Ratio (the proportion of the company's total capital that is borrowed) of not more than 1.5.
- To maintain a Debt Service Coverage Ratio of not less than 1.5. The Debt Service Coverage Ratio is defined as the ratio of Net Operating Income to Total Debt Service. This would indicate whether the property is generating enough income to pay its debt commitments.
- Not to declare or pay any dividend on its shares as long as the debt service coverage ratio is less than 1.5 and the amount deposited in any reserve account is less than the amount required to be deposited.

The trust certificates have been rated internationally as BBB+ by MARC International Ltd and they are listed on the Labuan International Financial Exchange (Malaysia). The advisors to the issuance include Bank Islam Ltd (*Shari'ah* structuring and Lead Arranger), ABN Amro (Financial and Global Coordinator), Aseambankers Malaysia Berhad (Co-Arranger) and Shamil Bank of Bahrain (Middle East Coordinator).

3.3.4 Hybrid Corporate Sukuks: Islamic Development Bank (IDB)

The IDB is a multilateral development financing institution founded in December 1973 by the first conference of the Finance Ministers of the Organization of the Islamic Conference (OIC). It officially began operations in 1975 with the purpose of fostering the economic development and social progress of member countries and Muslim communities individually as well as jointly in accordance with the principles of *Shari'ah*. Mobilization of resources has remained one of the greatest challenges facing the IDB. The emergence of *Sukuks* has provided the IDB a novel dimension through which to face this challenge and in August, 2003 the bank issued U.S. $400 million worth of trust certificates due in 2008.

Each of the certificates represents an undivided interest for the certificate holder in the Trust Assets. These assets are held by Solidarity Trust Services Limited which is a bankruptcy remote trustee created solely for the purpose of this *Sukuk* issuance.

The unique feature of this arrangement is in the portfolio of Trust Assets. Each certificate holder is granted the right to receive payments arising from the Trust Assets that include *Ijarah* (leasing) contracts, *Murabaha* (conditional sale) contracts, and *istisna'* (conditional sale of item to be manufactured) contracts. These returns are calculated on the basis of a fixed return of 3.625 % per annum on 12th of February and 12th of August each year until August 2008 when they will be redeemed in full.

Murabaha and *Istisna'* are contracts that cannot be traded on secondary markets as securitized instruments. They represent debt arrangements and the subsequent trading of such contracts would typify the exchange of money. According to *Shari'ah* principles, money can only be traded at par value and not for any profit.

However, if *Murabaha* and *Istisna'* are proportions of a portfolio consisting of at least 51 % tangible assets, then the securitized certificates of this portfolio may be traded on secondary markets. This is the case with the IDB *Sukuk* issuance where *Ijarah* contracts make up 51 % of the trust assets; a ratio that must be maintained. However, there are provisions for exceptional circumstances where the composition of *Ijarah* contracts can be *temporarily* reduced to a minimum of 25 % of the total pool of assets. If at any time the proportion of *Ijarah* contracts falls below 25 % then the arrangement will be dissolved and the IDB will be obliged to purchase all the assets owned by the trustee at the time of the dissolution event. The structure of the *Sukuk* assets will vary over the life of the contract as the trustee will employ principal collections for the *Sukuk* assets to acquire rights in further *ijara'a* contracts and invest in *Murabahah* contracts. However, there will be no further investments in *istisna'a* contracts.

Under the conditions of the prospectus, the trustee will purchase the portfolio of assets from The Islamic Corporation for the Development of the Private Sector (ICD). The ICD serves as a *wakala* and will delegate its servicing undertakings to the IDB. A *wakala* agreement serves to designate the business of the originator (IDB) to another agency (ICD) whose primary objective is to abate the consequences of information asymmetries. The principal and the agent are bound by equivalent contracts to the same *wakil* (agent).

The trust certificates have been given a rating of AA by Fitch Ratings Ltd, and an AAA by Standard and Poor's Rating Services. These ratings highlight the probability that certificate holders will obtain all the relevant payments they have subscribed for. The structure of the IDB *Sukuk* issuance is described in Figure 2.

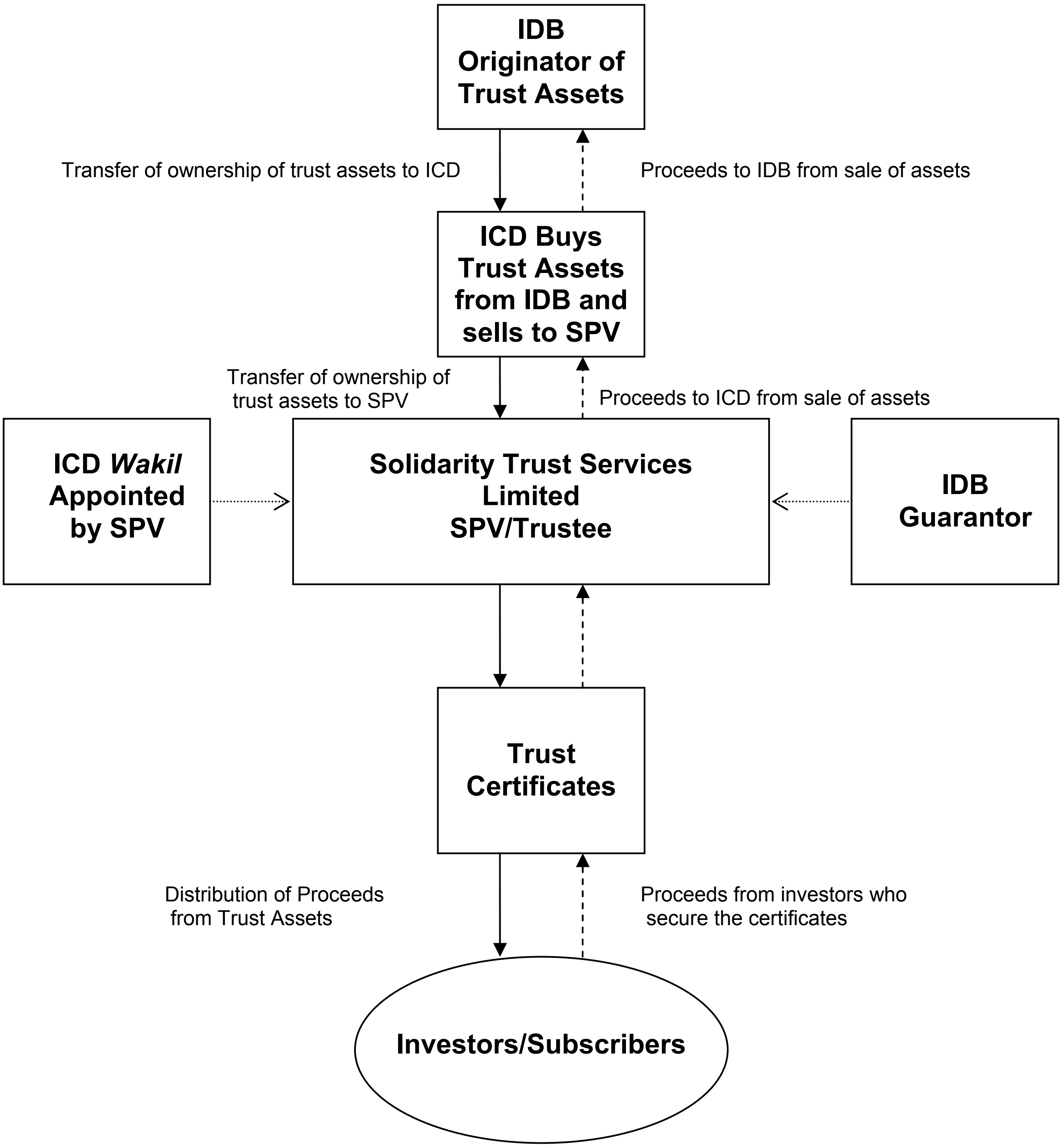


Figure 2: Arrangement of IDB Trust Certificate Issuance

3.4 ASSESSMENT OF SUKUK STRUCTURES

The market for *Sukuk* has injected a much needed scope for liquidity management in Islamic banks. Previously, such liquidity could only be secured through continuous *Murabahah* transactions. In a global market where conventional finance dominates, liquidity could only be acquired by transactions limited to specific *Shari'ah* acceptable commodities such as industrial goods, metals and oils. The process of issuing *Sukuk* certificates allows Islamic financial institutions to garner a much wider asset pool that were previously either inaccessible or inefficient.

However, some of the corporate and sovereign *Sukuk* prospectuses have come under increased scrutiny for their *Shari'ah* suitability. The predominant feature of several of the prospectuses is the floating rate return distributed to the certificate holders. The market reference used is the London Inter-bank Offer Rate (LIBOR) over which a competitive premium is added. However, it should be observed that in the case of the *Ijarah Sukuk* arrangements, LIBOR serves as a market reference for the returns and the intrinsic distributions arise from the rentals pertaining to the leasing arrangements with the originator and SPV.

The Sukuk issuance by the IDB serves as an excellent and promising example for future arrangements. The prospectus contained clear and precise *Shari'ah* considerations outlined by numerous leading scholars and it involved an innovative portfolio combination of *Ijarah*, *Murabaha* and *Istisna* projects. Also, returns were not ambiguously related to market benchmarks but were agreed upon a fixed rate of return on the relevant contracts and assets.

One dimension of the paradigm of Islamic finance that should not be lost upon compromises for increased profitability is altruism. In this regard, the *Sukuk*

prospectuses have not only mobilized previously untapped public sector funds but have also introduced long sought funding for development projects. The Qatar issuance funded a large medical complex (Hamad Medical City) in Doha and the Malaysia *Sukuk* certificates raised funds for several government owned hospitals as well as offices. Most significantly, the IDB *Sukuk* prospectuses raised funds for projects in 21 developing nations in a wide range of schemes that included power transmissions, hospitals, steel manufacturing, mineral water networks, livestock breeding, sea port development, pharmacology research, agricultural irrigation, telecommunications projects, rural development and colleges.

VI.

RISKS UNDERLYING SUKUK STRUCTURES

Risks adverse effect the competitiveness of an asset's pricing. The novelty of *Sukuks* inherently entails a higher exposure to certain market and financial risks. In this section we will discuss the nature of the different risks that the *Sukuk* arrangements are confronted with as summarized in Table-4.

4.1 MARKET RISKS

An important distinction is made between market risks and other types of risk factors. Market risk is defined as the risk on instruments traded in well-defined markets (Heffernan, 2003). Two categories of market risks are identified: general (systematic) and firm specific (idiosyncratic). Systematic risks can arise due to governmental and economic policy shifts whereas idiosyncratic risk arises because different firm specific instruments are priced out of correlation with other firms' instruments. Market risk is composed of interest rate risks, foreign exchange risks, equity price risks and commodity risks.

4.1.1 Interest Rate Risk (rate of return risk)

This can be considered as a rate of return risk as far as *Sukuk* are concerned. It may be mentioned again that *Sukuk* based on fixed rates are exposed to this risk in the same manner as fixed rate bonds are exposed to the interest rate risk. The rise in market (interest) rates leads to the fall in the fixed-income Sukuk values. Suppose on

January 1, 2004, an investor buys a 2 year Sukuk at 10% annual return rate. On January, 2, the market rates increase to, say, 15%. Although the market rates have changed, the Sukukholder will still get the 10% coupon payments. Hence his asset now earns less than the 15% market rates. All fixed return assets either from *Ijara*, *Istisna'*, *Salam* or any other origin will face this risk. This also entails reinvestment risk and an opportunity cost of investing at the new rates, particularly if the asset is not liquid as in case of the zero-coupon non-tradable *Sukuk*. Maturity plays a very important role in intensifying the impact of this risk. Suppose the *Sukuk* were for 10 years maturity instead of 2 years. The investor will face the reinvestment risk for 10 years. Adverse changes in market rates will also unfavourably affect the credit worthiness of the issues and will lead to the increase in the credit risk of the issue.

Sukuk certificates are exposed indirectly to interest rate fluctuations through the widespread benchmarking with LIBOR in their financing operations. Consequently, the nature of these assets is that they are exposed to fluctuations in the LIBOR rate or even the market rates. For example, the mark-up is a defining characteristic of the *Murabahah* contract that is currently the most popular Islamic financial instrument on the asset side of the balance sheet. Every contract benchmarked with LIBOR inherits the possibility that in the future the LIBOR rates will rise and that the issuer, on the asset side, will not have made as much profit as future market conditions might dictate. Interlinked is the liabilities side of the issuer's balance sheet that has provisions for adjusting to market conditions. The *Sukuk* issuers will have to respond to fluctuations in LIBOR because any increase in earnings will have to be mutual with the investors. However, on the asset side, the re-pricing of *Murabaha* contracts is not possible as debts are non-tradable. Therefore, we have a situation where *Murabaha* contracts expose the issuer as well as the buyer of the issue

to a considerable interest rate risk, albeit indirectly. Some of the *Sukuk* issuances, such as the IDB trust certificates, have an underlying portfolio of assets that include *Murabaha* receivables, rendering the whole issuance indirectly exposed to an interest rate risk.

An intriguing difficulty facing Islamic financial institutions is the fact that *Sukuks* are being designed by detaching the assets from the balance sheets and selling them. Non-tradable debts dominate the assets of Islamic financial institutions. Hence, there is no potential for these institutions to issue Sukuk unless they undertake more *Ijara* contracts. Moreover, product-mix and contract specifications are dictated by competition manifested by a dualistic global financial market that is dominated by a conventional system. Ultimately, what we find is that despite all efforts by Islamic banks to design *Ijarah* contracts on a fixed rate basis, floating rates may be the only significant foundation of investment due to market forces and overall competition.

4.1.2. Foreign Exchange Rate Risks

Currency risk arises from unfavourable exchange rate fluctuations which will undeniably have an effect on foreign exchange positions. In the event of a divergence between the unit of currency in which the assets in the *Sukuk* pool are denominated, and the currency of denomination in which the *Sukuk* funds are accumulated, the *Sukuk* investors are rendered to an exchange risk. A clear manifestation of this situation arises with the IDB prospectus. The unit of account of the IDB is an Islamic Dinar (ID), and is equivalent to one Special Drawing Right (SDR) of the IMF that is weight-composed of 45% in US$, 29% in Euro, 15% in Japanese Yen and 11% in Great Britain Pounds. However, the *Sukuk* certificates are denominated in US$ and

consequently there is a currency mismatch. Although recently this mismatch has resulted in a profit for the IDB because of the weakness of the US$ relative to the Islamic Dinar, any appreciation of the US$ against the ID will invariably result in a currency loss.

The IDB serves as a guarantor and thus protects the investors from any exchange rate fluctuations. Indeed, the investors in all the *Sukuk* prospectuses are shielded through similar provisions. However, this does not eliminate the exchange risk faced by the originators. In truth, exchange rate risks are compounded with a rapidly growing industry and increasingly multi-national investment arrangements. The challenge for *Sukuk* issuing corporate entities and sovereigns becomes to devise an effective exchange risk management strategy congruent to *Shari'ah* principles.

It is noticeable that the Chinese government has implemented a simple method of eliminating such a risk. They divide the issue in to two parts. Suppose the issue is $1 billion. The first part of $ 400 million will be in US Dollars and the second part of $ 600 million will be in Euro. Indeed, the Sukuk issues can be based on this simple principle and can be based on multi currencies instead of creating a contingency claim on the issuer's balance sheet in terms of the guarantees.

Table – 9: Summary of Risk Characteristics of Sukuk Structures

<table>
<tr><th>Types of Sukuk</th><th>Description of Sukuk structure</th><th>Credit Risk</th><th>Rate of return (Interest rate risk)</th><th>FX risk</th><th>Price risk</th><th>Other risks</th></tr>
<tr><td>Zero coupon Sukuk</td><td>Istisna', Murabahah debt certificates – non-tradable</td><td>Unique basis of credit risks exist, see, Khan and Ahmed (2001)</td><td>Very high due to fixed rate, remains for the entire maturity of the issue</td><td rowspan="6">If all other conditions are similar, FX risk will be the same for all cases of Sukuk. However, those Sukuk which are liquid or which are relatively short term in nature will be less exposed. The composition of assets in the pool will also contribute to the FX risk in different ways. Hence this can be very useful tool to overcome the FX risk by diversifying the pool in different currencies.</td><td rowspan="6">Price risk relates to the prices of the underlying commodities and assets in relation to the market prices. Ijara Sukuk are most exposed to this as the values of the underlying assets may depreciate faster as compared to market prices. Maintenance of the assets will play an important part in this process. Liquidity of the Sukuk will also play an important part in the risk. Salam is also exposed to serious price risks. However, through parallel contracts these risks can be overcome</td><td rowspan="6">Liquidity risk is serious as far as the non-tradable Sukuk are concerned. Business risk of the issuer is an important risk underlying Sukuk as compared to traditional fixed incomes. Shari'ah compliance risk is another one unique in case of Sukuk. Infrastructure rigidities, i.e., non-existence of efficient institutional support increases the risk of Sukuk as compared to traditional fixed incomes, see Sundararajan, & Luca (2002)</td></tr>
<tr><td>Fixed Rate Ijara Sukuk</td><td>Securitized Ijara, certificate holder owns part of asset or usufructs and earns fixed rent - tradable</td><td>Default on rent payment, fixed rate makes credit risk more serious</td><td>Very high due to fixed rate, remains for the entire maturity of the issue</td></tr>
<tr><td>Floating Rate Ijara Sukuk</td><td>Securitized Ijara, certificate holder owns part of asset or usufructs and earns floating rent indexed to market benchmark such as LIBOR – tradable</td><td>Default on rent payment, floating rate makes default risk lesser serious – see previous case</td><td>Exists only within the time of the floating period normally 6 months</td></tr>
<tr><td>Fixed rate Hybrid/ Pooled Sukuk</td><td>Securitized pool of assets; debts must not be more than 49%, floating rate possibility exists – tradable</td><td>Credit risk of debt part of pool, default on rents, fixed rate makes credit risk serious</td><td>Very high due to fixed rate, remains for the entire maturity of the issue</td></tr>
<tr><td>Musharakah Term Finance Sukuk (MTFS)</td><td>Medium term redeemable musharakah certificate based on diminishing musharakah – tradable as well as redeemable</td><td>Musharakah has high default risk (see Khan and Ahmed 2001), however, MTFS could be based on the strength of the entire balance sheet</td><td>Similar to the case of the floating rate. This is however, unique in the sense that the rate is not indexed with a benchmark like LIBOR, hence least exposed to this risk</td></tr>
<tr><td>Salam Sukuk</td><td>Securitized salam, fixed-rate and non-tradable</td><td>Salam has unique credit risk (see Khan and Ahmed 2001)</td><td>Very high due to fixed rate</td></tr>
</table>

4.2 CREDIT AND COUNTERPARTY RISK

Credit risk refers to the probability that an asset or loan becomes irrecoverable due to a default or delay in settlements. If the relationship involves a contractual arrangement than the counterparty risk is the probability that the counterparty retracts on the conditions of the contract. The consequences can be severe with a decline in the value of a bank's assets. The credit and counterparty risks inherent in Islamic finance are unique owing to the nature of Islamic financial instruments that become the foundation of the *Sukuk* asset pools. Unlike conventional financial institutions, Islamic banks do not have access to derivative instruments and other credit risk management mechanisms due to *Shari'ah* considerations.

Chapra and Khan (2000) and Khan and Ahmed (2001) identify various unique credit risks that are particular to Islamic finance. *Sukuk* prospectuses operate, for the large part, in emerging markets where counterparties possess less sophisticated risk management mechanisms. The rescheduling of debt at a higher mark-up rate is not existent due to the prohibition of interest. Consequently, counterparties would be more inclined to default on their commitments to other parties. Also agency costs are higher in with regard to Profit-Loss Sharing arrangements.

The recent major *Sukuk* issuances have mainly involved assets based on *Ijarah*, *Istisna, Salam* and *Murabaha* contracts. There are numerous credit risk considerations associated with these modes of finance. *Salam* contracts are exposed to the risk that commodities will not be supplied on time or to the agreed quantity. *Istisna* contracts involve performance risk. The client of the bank may default on the conditions of the contract and the sub-contractor may fail to render the necessary services.

4.3 SHARI'AH COMPLIANCE RISKS

Shari'ah compliance risk refers to the loss of asset value as a result of the issuers' breach of its fiduciary responsibilities with respect to compliance with *Shari'ah*. There could be several such instances of wilful or innocent breaches. The dissolution clauses of the *Sukuk* prospectus define events that will make the *Sukuk* deed null and void due to *Shari'ah* non-compliance. For example, if the *Sukuk* is based on a hybrid of *Ijara* and *Istisna'* assets, *Ijara* must always be more than *Istisna'* in the pool, otherwise the *Sukuk* deed will dissolve. Thus broadly speaking, *Shari'ah* compliance risk must be defined as a rate of return foregone in comparison to the market rates, as a result of complying with the *Shari'ah*. The issue hence is that of competitiveness and survival in capital markets as a *Shari'ah* complaint asset class.

Islamic finance is an economic paradigm reflecting the essence of a faith that is a way of life for Muslims. Therefore, the pressure to maintain the nature of Islamic financing in a *Shari'ah* compliant manner remains powerful. The *Sukuk* structures must not only reflect this but also preserve competitiveness. Often it is the case that a fine balance is struck between *Shari'ah* conformity and project feasibility considerations to the extent that jurists and *Shari'ah* consultants play a continuously integral role in the formulation of the *Sukuk* prospectuses.

There are a number of discrepancies regarding the applicability of Islamic financial instruments reflecting the different schools of thought as well as the legal regimes in which the *Sukuk* are issued. Such a theoretical ambiguity would pose further operational risks that the Islamic bank might run afoul of *Shari'ah* jurisdictions. For example, the theoretical applicability of the *Murabaha* contract varies between different schools of thought. Numerous jurists such as the Organization of the Islamic Conference (OIC) *Fiqh* Academy concur that the

Murabaha contract is binding on only the seller of the contract and not on the buyer. Other jurists hold the view that both the parties to a contract have an equal obligation to the terms of the contract.

However, it is notable that financial engineering has made it possible for *Shari'ah* positions to converge. For example, a few years ago, floating rate *Ijara* was not broadly conceivable to be *Shari'ah* compliant as, according to the *Shari'ah* principles, the originator can only guarantee rents (returns) on the fixed return underlying assets. As mentioned above, fixed rate Sukuk face serious market risks. *To match the market requirements of Sukuk to be floating rate, and the Shari'ah requirements of rents to be fixed rate*, the *Ijara Sukuk* are based on a Master Ijara Agreement with several subordinate *Ijara* agreements. In the subordinate Ijara contracts, the rents are revised semi-annually in accordance with the market bench mark. This ensures the rent is fixed for 6 months and floating at the same time. Major Ijara Sukuk (e.g. Gutherie, Malaysia, Qatar, Saxony-Anhalt etc.) are based on this marriage.

The investors could still face interest rate risk to a certain extent. They would be unprotected in the event that the floating rate rose to a level higher than the fixed rate of the underlying assets. Since the originator can only guarantee the fixed return on the underlying asset pools, the issue of floating rate returns still remains contentious, particularly, in pooled/hybrid Sukuk. Indeed, the only major issuer to offer fixed rate distributions is the IDB which continues to face the underlying rate of return risk.

Another example relates to the **liquidity facility**. The *Sukuk* prospectuses analyzed have had stipulations for a liquidity facility to abate lags between payments to investors and returns on the underlying asset pools. Some liquidity facilities have

been formed to permit the trustee to benefit the facility for any liquidity deficit ensuing from default in the *Sukuk* asset pools. The imbursement of the liquidity services have been provisional upon surplus funds after the distribution of coupon payments to the *Sukuk* holders. However, it has been recommended by *Shari'ah* scholars that the sole purpose of such a liquidity facility should be to easing out lags between investor payments and returns on the underlying asset pools. The importance of such a liquidity facility can most effectively be garnered where the arrangement has floating rate payments because fixed rate returns would imply the non-existence of interest rate differentials.

A third example is that of the functions and relationships **of special purpose vehicles** (SPVs) and other third party agents. In the incidence of a *wakil* (agent) the guarantor and *wakil* have to be separate entities to negate any conflicts of interest and moral hazards. Also, there had been proposals to invoke two SPVs in several instances instead of one. In this case, the first SPV would have to manage the financial obligations of buying and reselling the underlying *Sukuk* assets to the second SPV that would be a trust with the purpose of issuing the certificates. However, *Shari'ah* considerations prefer a single streamlined SPV that would perform both functions of financing the transaction of *Sukuk* assets and servicing the trust certificates for the investors. Such an SPV should have prior experience in financial markets and should also remain independent of the originator.

In conclusion, the association of *Shari'ah* supervisors with *Sukuk* issues will ensure investor confidence. However, the convenience with which the *Shari'ah* compliance requirements can be married with the conditions of market competitiveness will remain a great challenge for the Sukuk issues.

4.4 OPERATIONAL RISKS

There are numerous other risks specific to the operation of the *Sukuks*. These risks mirror those existent in conventional bond markets and are operational in the sense that they are inherent to the structure of the issuances rather than the underlying Islamic principles.

A. Default Risk: Each prospectus has provisions for the termination of the certificate in the event of a default by the obligor. In case the obligor fails to pay the rentals on the *Ijarah* agreements that form the coupon payments, the certificate holder can exercise the right to nullify the contract and force the obligor to buy back the assets. Furthermore, in the event that the obligor fails to reimburse the principal amount the certificate holder can exercise the right to take legal action and force the obligor to enter into debt rescheduling proceedings.

B. Coupon Payment Risk: The obligor may fail to pay the required coupons on time. Any delayed coupons will be subject to a specified payment amount that will be accumulated with the SPV. However, these accumulated funds are recommended by *Shari'ah* councils to be donated for charitable purposes.

C. Asset Redemption Risk: The originator has to buy back the underlying assets from the certificate holder. The principal amount paid may not be equal to the *Sukuk* issue amount and, as a result, there is the risk that the assets may not be fully redeemed.

D. SPV Specific Risks: The Special Purpose vehicle is generally designated to be a standalone institute that is bankruptcy remote from the originator. However, there may be a notion of settlement risk involved with the SPV in that the originator will

have to channel the payments through a clearinghouse. The certificate holders will then be reimbursed through the clearinghouse.

E. Investor Specific Risks: The certificate holder is rendered to several risks pertinent to *Sukuk* structures. These are primarily regarding liquidity issues. The *Sukuk* structures, as welcome as they are in dealing with liquidity management issues in Islamic finance, are exposed to a liquidity risk because there currently does not exist a well structured and sufficiently liquid secondary market. The certificates are listed on several local markets but this alone does not signify their liquidity. The *Sukuk* certificates are medium to long term in maturity and their continued success will largely depend on their ability to evolve into highly liquid means of fund investment with adequate risk management mechanisms. As is the currently the case, most of the certificates tend to be held until maturity.

F. Risks Related to the Asset: The underlying assets of the *Sukuk* certificates are subject to numerous risks as well. Primarily, there is the risk of loss of the assets. These are minimal with regards to *Ijarah* assets of land parcels. However, in the case of equipment and large scale construction typifying some of the underlying IDB assets the risk of loss may not be so negligible. Nevertheless, Islamic finance has *Shari'ah* compliant provisions for insurance claims in the form of *Takaful* and these arrangements will have to be utilized to mitigate the risks of asset losses. Related to the asset risk as well is the need to maintain the structures of the assets. Proper maintenance will ensure adequate returns to the certificate holder. According to *Shari'ah* principles, the SPV will usually be required to bear the responsibilities on ensuring asset structure maintenance.

4.5 INSTITUTIONAL RIGIDITY

Sukuk originate from developing countries. The financial infrastructure in some of these countries such as Bahrain and Malaysia are well developed. But generally this infrastructure is weak in most emerging economies. In addition, *Sukuk* require unique *Shari'ah* compliant structures. This creates a state, which can be termed as one of institutional rigidity and which cannot be removed in the short run, invariably increasing the risks of *Sukuks*. The features of this state are:

- Lack of hedging and financial engineering processes;
- Non-existence of inter-bank money markets;
- Lack of best practice uniform regulatory standards and regimes;
- Weaknesses in litigation and legal framework support, particularly, in the treatment of default;
- Non-uniform accounting, auditing and income and loss recognition systems;
- Non-robust investment appraisal, promotion and monitoring infrastructure;
- Ineffective external credit assessment systems;
- Rudimentary state of financial markets and
- Weak inter-segmental support and linkages. For example, without life insurance coverage the credit risk of a client is bound to be high. This is one of the important risk factors faced by Islamic banks due to non-existence of comprehensive Islamic insurance coverage.

V.

MANAGING THE FINANCIAL RISKS OF *SUKUK* STRUCTURES

Sukuk certificates serve to replicate the functions of conventional bonds and tradable securities in resources mobilization from markets and injecting liquidity into the enterprise or government and in providing stable resource of income for investors. However, *Sukuk* distinguish from conventional bonds and asset securitizations in several ways:

i. Conventional investors in corporate and government bonds hope to capitalize on favourable developments in interest rates. Capital gains are accumulated when fixed-rate bond prices rise as variable market indices fall. The legitimacy of *Sukuk* structures in the *Shari'ah* lie in the fact that they do not take advantage of interest rate movements.

ii. Investing in *Sukuk* issuances involves the funding of trade or production of tangible assets. *Sukuk* are directly linked with real sector activities. Hence these will not create short-term speculative movement of funds and potential financial crises.

iii. *Sukuk* investors have an inherent right to information on the use of their investments, nature of the underlying assets, and other particulars that would otherwise be considered redundant in conventional investments. This will help introduce discipline in the market.

If *Sukuk* can be competitively structured and a market for these is developed, the developing economies in which they originate will largely benefit. In this section we discuss some aspects of enhancing the competitiveness of *Sukuk* structures by overcoming some of the undesirable underlying risks. In this regard, we discuss some aspects of institutional reform and some possible financial engineering.

5.1 SUKUK AND THE CHALLENGE OF INSTITUTIONAL REFORM

We can highlight a number of pointers for institutional reform that will have a bearing on the competitiveness of Sukuk structures.

5.1.1 Public Debt Management

Fixed income markets in developing countries are dominated by government bonds. Therefore, the single most important reform of the markets can come from the reform of the public debt management. Since the 1980s, government debt management issues have garnered increased prominence amongst policymakers and economists alike. De Broeck et al (1998) document these changes and the implications of the reforms. With an increase in government debt-GDP ratios there has been an increased significance for more cost-effective financing strategies that minimize debt management costs. Financial cost considerations have come to the forefront and replaced the traditional benchmarks of budgetary and accounting costs in managing trade-offs. These financial costs include the interest costs and volatilities in capital costs of the government's debt portfolio. The 80s was an epoch of transformation where the forces of financial innovation, globalization, and

international deregulation warranted novel financing techniques such as secondary market reorganization and interest rate derivatives.

In response to these pressures, it has been observed that governments have shifted from an institution of relationship financing to that of open market funding. Governments can better control debt service variations through relationship financing. It is discussed that the change to market based funding is expected to increase the volatility of debt service and also has ramnifications for the price discovery process in secondary markets. An upshot of these changes has been the rise to prominence of derivative markets and securitization.

5.1.2 Derivative Markets

The introduction of futures and options markets has further consequences on market and financing dynamics. Communication information is better conveyed through Futures and options markets. Attracting an increased number of traders will invariably increase the information available on the markets.

The spot price stabilizing role of futures and options markets depends on the speculator’s information. With better informed traders, a stronger signal of market conditions is exuded and thereby stabilizing the spot prices. Conversely, increased speculation by less informed traders will inevitably have a de-stabilizing effect on market spot prices. Futures and options markets can also serve to stabilize the value of underlying assets by acting in an insuring role. This can occur if these markets allow investors to pool risks more efficiently and share them as such. Furthermore, futures and options markets are observed to increase the informational efficiency of spot

markets by attracting further traders and allocating for a greater number of quicker trades by rendering lower transaction costs.

The effects of these innovations on government bond yields are ambiguous but the informational efficiency of spot markets has been improved. Financial innovation is a never ending phenomenon and the deterioration of international borders have speeded up in recent years witnessed by the formation of the single Euro currency and evolution of the Basel II concordat. The delay of Islamic financial markets and governments to adopt conventional fund raising mechanisms can be seen as a silver lining as they can take advantage of an ostensible window of opportunity to learn lessons from the experiences of other policymakers. In short, the evolutionary changes of financial innovation, deregulation, globalization of financial services and introduction of novel financing instruments warrants the adoption of supporting risk management mechanisms, viable secondary markets and relevant regulatory bodies.

5.1.3. Securitization

We can draft an analogous stance here between the introduction of *Sukuk* in Islamic markets and the rise to prominence of securitization and interest rate derivatives in conventional markets in the 80s. The emergence of the market for asset backed securities over the past two decades has permitted banks around the world to free their capital by re-packaging and re-selling portfolios of loans, assets and other receivables. This adjusts the criteria for lending by forcing financial institutions to meet the market's standards for loan quality and sufficient pricing for risk. It also reduces banks' funding mismatch. On the other hand, it presents immense challenges

that must be confronted if banks in emerging economies are to meet world standards of competition in financial services.

Securitization is commonly used as a risk management tool. It helps decrease funding risk by diversifying funding sources. Financial institutions also employ securitization to purge interest rate mismatches. As an example, banks can offer long-term fixed rate financing without significant risk, by passing the interest rate and other market risk to investors seeking long term fixed rate assets.

Securitization can also benefit investors. It allows them to make their investment decisions independently of the credit-standing of the originator, and instead to concentrate on the degree of protection provided by the structure of the SPV and the capacity of securitized assets to meet the promised principal and interest payments. Furthermore, securitization creates more complete markets by introducing formerly remote asset classes that better suit investor risk preferences and by increasing the potential for investors to achieve the benefits of diversification. Therefore, by meeting the needs of different market segments, securitization transactions can generate gains for both originators and investors.

The same benefits can be attributed to *Sukuk* certificates. They allow the institution to manage balance sheet mismatches to securitize longer term assets. Investors are also given the option to invest in asset grades that are suitable for their investment needs. Also, financial markets are more complete as previously and untapped assets are now available for public sector resource mobilization.

5.1.4. Liquidity and secondary markets

The sustenance of any primary market depends heavily on the development of a sustainable and robust secondary market. Islamic savers and investors, like conventional ones, portray varying risk preferences and a secondary market should be developed to reflect this. *Sukuk* certificates are unique in that the investor becomes an asset holder and is directly tied in to the nature and functioning of the underlying asset pools. *Sukuk* certificate holders carry the burden of these unique risks.

Mirakhor (1995) contemplates the viability of an Islamic secondary market for tradable certificates. The primary concern of an Islamic secondary market is its marketability. All things being equal, a certificate holder would rather participate in a well structured and well regulated secondary market instead of trading in a poorly run market. By doing so, the investor's chances of liquidating his investments as efficiently as possible are enhanced. However, the marketability risk is closely tied in to other factors such as informational efficiencies as well as the number of traders in the market. The greater informational efficiencies are the better informed decisions investors can make about markets and the more accurate price transparencies will be. Also, higher number of traders implies a better chance of liquidating securities and helps reinforce access to more powerful market signals.

An important consideration to make with regards to Islamic secondary markets is the *Shari'ah* applicability of the trading involved in the exchanges. It is considered that the central bank or the security commissioner will have a pivotal role in mediating the interactions between the brokers and traders to lend adequate support and supervision to facilitate the functioning of markets. The optimal structure of an Islamic secondary market would be a dealer market where several groups of individuals will liquidate substantial proportions of assets into tradable securities. The

central bank's role in such an arrangement would be to allocate adequate funds and supervision so as to avoid re-financing of debt generated by independent borrowers.

The growth of Islamic finance has been impeded largely due to the fact that no significant local or international capital markets exist. The Malaysian government has made waves of progress in developing a capital market competitive on size, volume of financial instruments and efficiency of arrangements. The progress made in the development of the capital markets has helped nurture the growth and development of the Malaysian economy. The government of Malaysia launched the Capital Market Master Plan in 2001 to develop a framework for the Malaysian capital market directed at increasing the competitiveness of the capital market and facilitating an efficient provision of financial instruments and securities. Also, the government launched a Financial Sector Master Plan to oversee and supervise the continual development of the Malaysian financial sector. Both these initiatives typify the strong regulatory, supervisory and financial structure required to formulate and nurture a competitive capital market. The challenges remain to provide increased risk management mechanisms, increase market liquidity, create a truer bond yield benchmark as well as widening the issuer and investor base.

Currently, the Malaysian Bourse has the most developed Islamic Capital Market with over 800 counters and an estimated market capitalization of US$ 168 billion. In global comparison, 93 % of Islamic securities are issued domestically in Malaysia[3]. The formulation and continued success of the Dow Jones Islamic Index provides another avenue for further market liquidity of tradable Islamic securities. With the emergence of Dubai and Bahrain as powerful financial hubs in the Middle East, the incentive now is to formulate an efficient, regulated and liquid international

[3] See the previous footnote.

capital market for Islamic financial services. Both Bahrain and the U.A.E. have active stock markets but these will have to be reinforced to accommodate the growing Islamic financial sector market that has so far played a bit-part role in comparison to conventional stocks and shares on these markets.

Liquidity can be measured by the immediate access to a determinate amount of cash. The adequate mitigation of credit and pricing risks of assets has to be targeted in any formulated balance sheet management system. The success of the *Sukuk* structures in helping firms manage their liquidity will be contingent on their ability to develop into highly rated certificates with a unwavering overnight value. It is a positive sign that several of the prospectuses have been oversubscribed but the reality seems to be that these certificates are held to maturity even though they can be traded on listed stock exchanges.

The main avenue for Islamic financial institutions to maintain high liquidity has been through back to back *Murabaha* transactions. *Sukuks* present an important progressive step in the pursuit of liquidity management but the absence of a structured inter-bank market proves a challenging hindrance as institutions cannot position their funds within a different range of short to long term investments. Warren (2004) identifies the existence a risk pyramid of investments for a reliable asset/liability management. Prior to the *Sukuk* issuances, Islamic financial institutions were faced with an indistinct situation to choose between a dearth of *Shari'ah* compliant, low return instruments and a world of non- *Shari'ah* compliant, high return investments. Consequently, almost every Islamic financial institution is built upon layers and different levels of *Shari'ah* compliancy. This will be a continuous phenomenon until Islamic finance can develop fully *Shari'ah* compatible inter-bank markets, liquid financial instruments and risk management mechanisms.

5.2 SUKUK AND THE CHALLENGE OF DERIVATIVES

Derivatives trading in conventional markets provide two fundamental challenges to *Sukuks*: a) fixed and floating rate swaps have been very effective in reducing the funding costs and hence raising overall competitiveness and b) these have been very effectively been used to manage credit and market risks. The statistics provided by the Bank for International Settlement shows that of all the financial risk management tools in the global markets interest rate derivatives such as fixed to floating rate swaps constitute 70% of the total, 20% is comprised of FX derivatives and the remaining of commodity and equity derivatives. These add tremendous competitive powers to institutions dealing in fixed income asset management by managing the interest rate risks and by reducing the funding costs.

Interest rate derivatives are financial instruments that are defined by their dependency on interest rate fluctuations. Examples of interest rate derivatives include bond options, interest rate caps/floors and swap options. They acquired substantial popularity during the 80s and 90s when financial innovation coupled with unpredictable interest rate volatilities warranted novel methods of financial risk management.

What is then the concern? The non-existence of interest rates in Islamic finance apparently makes the need for derivative instruments redundant in Islamic markets. However, we need to note some important qualifiers. First, it shall be noted that the prohibition of interest and *Gharar* does not close the room for financial engineering in compliance with the *Shari'ah*. Second, Sukuks cannot avoid being competitive if they are to operate in traditional financial markets. Third, the positive aspects of derivative markets can be beneficial for developing capital markets if

replicated in the emerging markets. We discuss some aspects of these considerations in the following paragraphs.

Of impending concern for the managers and investors in Sukuk is their ability to protect themselves from different types of risks. The next logical step in the evolution of Islamic finance is the provision of risk management mechanisms that replicate the functions of conventional instruments in a way complaint with the *Shari'ah*. The *Shari'ah* does not recognize financial options as a form of wealth. Hence these options cannot be traded. The very nature of options entails uncertainty. Call options reward the investor on the upside movement of the asset value whereas put options payoff with respect to the downside movement of the underlying asset value. This degree of uncertainty is determined by Islamic jurists to essentially amount to *Gharar*.

The closest approximation to a conventional option contract within Islamic finance is the *bay' al-urboon* contract. The contract affords the buyer of a good to make a deposit whereby if he decides to buy the specified product in the future he will pay the difference between the full price and the deposit. If circumstances dictate that he will not buy the commodity then the seller keeps the deposit. In a sense, the *urboon* contract ostensibly replicates the functions of a conventional call option. The permissibility of the contract within Islamic doctrines is debated and much of debate is with regards to historical records of the use of the contract during the time of the Prophet Muhammad. Several schools of thought are in the impression that the uncertainty arising from the use of the contract amounts to *Gharar* and is thus unfair on the seller. On the other hand, other schools of thought uphold the contract citing inaccuracies in the historical records of its alleged reproach. The applicability of the contract is particular to the condition that commodity in question is specified and

unique to the contract. According to *Shari'ah*, the *Urboon* cannot be used for generic commodities which hinders its possibility to fully replicate the functions of conventional option contracts that are on unspecified underlying assets. According to the OIC Academy an option contract is not tradable. Firstly, the option contract amounts to investing in something intangible. Secondly, the uncertainty involved in the contract is tantamount to *Gharar* making it invalid within the sphere of *Shari'ah*.

5.2.1 Embedded Options and Gharar

The above cited position has been with regards to the applicability of stand alone contracts such as call and put options. Embedded options are not detachable and are not traded, but instead form part of the initial issuance contract. Embedded options can create callable or puttable bonds. A callable bond contains provisions allowing the issuing firm to buy back the bond at a predetermined price at a certain time in the future. Such bonds normally cannot be re-called within the first few years of the issuance. Conversely, the puttable bond allows the holder to demand an early redemption at a predetermined price at a certain time in the future. A puttable bond commonly has lower yields than option-free bonds because it is more attractive to the buyer. Similarly, the callable bond will have higher yields than non-callable bonds as it is deemed less valuable to the holder.

Merton (1995) identifies that puttable bonds are equivalent to a portfolio of discount bonds and a short term bond at the risk-free rate. The put option is exercised when the discount prices fall and this alleviates the interest rate risk faced by the investor in the bond. Accordingly, it is concluded that when prices of discount bonds

fall, the prices of embedded options on these bonds fall less. Embedded options, therefore, help to stabilize the prices of these instruments.

The applicability of embedded options can be analyzed through the suggestive framework developed Al-Suwailem (2000). To analyze the term *Gharar* in a conventional sense it is compared to the ideals of zero-sum games. *Shari'ah* dictates the prohibition of *Gharar* as it renders a financial contract "unfair" to the extent that one party will wholly benefit at the expense of the counterparty. This is the situation that prevails in zero-sum games. Accordingly, it is determined that all zero-sum games are not compatible with *Shari'ah* principles. It is argued that this circumstance in Islamic finance is not economically irrational because involving in a zero-sum game cannot make both parties better off so in fact it would be Pareto Optimal for both parties not to play zero-sum games.

The impending issue, therefore, is whether embedded options are zero-sum games or not. The theory of zero-games was first derived from game theory developed by von Neumann and Morgenstern in 1944 that uses mathematical models to study interactions with formalized incentive structures. These types of games can be defined by the payoffs to both the parties to the game. Fundamentally, the winner in a zero-sum game "wins" everything the counterparty "loses", hence the sum of the payoffs amounts to zero. In reality, financial systems and markets are so intricate that zero-sum games form a micro-structure to a greater and more complicated fabric of stakeholders.

It will be argued that embedded options do not strictly take the shape of zero sum games that tradable option contracts take. Non-zero sum games are situations where there not be only win-lose outcomes. Such games can have a different spectrum of win-win, lose-lose and win-lose payoff structures. *Shari'ah* considerations do not

reproach contracts that embody risk but rather when this risk is an avenue for one party to entirely benefit at the expense of the counterparty. Al Suwailem discusses the *Shari'ah* guidelines by which risk can be tolerated in non-zero sum games before it becomes *Gharar*. These are:

Negligible: Essentially this criterion states that the probability of loss or failure must be small enough to be acceptable. Also, the impact or magnitude of loss must be sustainable.

Inevitable: This condition relates to the possibility of win-win payoffs such that a mutually beneficial outcome can be garnered. The risk is considered inevitable because it has to be realized for any outcome to be experience whether it is beneficial or not.

Unintentional: This dimension refers to the intentions of the participants to the contract. They should preferably avoid playing for win-lose situations. If both the parties play for the win-lose situation then the risk fundamentally amounts to *Gharar*. The challenge in this case is to economically quantify the players' motives. It is suggested to employ a simple expected utility rule, weighing each expected outcome by the probability of it occurring. Thus, we can have an objective measurement of whether a transaction embodies *Gharar* or not.

Scrutinizing the functions of embedded options under these three criteria we can make a case for their *Shari'ah* acceptability. Any eagerness by *Shari'ah* jurists to accept embedded options may be undermined on the underlying uncertainty associated with the exercising of the option. The concern is whether this uncertainty amounts to *Gharar* or can be accepted within the boundaries of Islamic jurisdiction.

Firstly, we can try to classify this uncertainty as "negligible". The embedded option in conventional bonds is usually not exercised before 2-3 years of the issuance of the bond. Even then, it is only exercised subject to economic developments and interest rate movements pertaining to the value of the bond. Also, it is worthy to note with embedded call options the buyer of the bond is not left "empty handed" if the option is exercised. Rather, the originator buys back the bond at a pre-determined and agreed price and throughout the life of the bond the buyer enjoys a stream of coupon payments. Conversely, a tradable option contract is not bought back but becomes void if markets move against the expectations of the option holder. Consequently, the premium on the contract is lost and the buyer is left with a loss. Therefore, we can move to classify the uncertainty as significantly less in magnitude and possibly less probable for two reasons. First, if the call option is exercised the buyer is compensated and the bond is bought back at a previously agreed price. Second, the likelihood of the bond option being exercised is only possible after several years after the issuance.

Secondly, the dimension of inevitability states that "win-win" outcomes should be possible. The results of embedded options may not be considered to be totally "win-win". After all, the option is exercised when circumstances make it profitable to do so. However, because callable bonds are "less valuable" to the buyer, the coupon payments are higher to reflect this. The buyer also gets reimbursed for the bond that is bought back. Therefore, the overall payoffs to both the parties can be measured to *not* follow a zero-sum pattern. What is observed are circumstances where both parties to the contract are left better off than had the investment not been undertaken. The buyer of the bond would not have received the coupon payments and the issuer may not have benefited from the liquidity profits of the bond issuance.

Finally, the intentionality dimension is tied closely to the presence of a zero-sum structure. The embedded option arrangements do not embody such payoff structures that typify tradable call and put option contracts. Therefore, the upshot from these considerations is that there is scope for embedded options to be considered within the sphere of *v*. The *modus operandi* of the provisions for embedded options in *Sukuk* structures must be formulated to be specifically tailored for the purposes of Islamic finance. Instead of tying into interest rate movements that are typical of conventional bonds, *Sukuk* options can be related to the value of the underlying assets and their continued viability and profitability with respect to existing economic conditions.

5.2.2. Embedded Options as a Risk Management Tool

Conventional investors have a wide range of financial instruments to select from through which to construct different investment strategies. Bonds with embedded options are one of a myriad of such instruments. Neftci et al (2003) identifies three opportunities to expand the scope for analyzing embedded bond options. Firstly, these bonds can be evaluated for their price-stabilizing properties. Secondly, they can be implemented in replicating interest rate derivative markets. Finally, embedded option bonds have been traditionally popular among private sector issuers in developed markets and less so among governments of both developed and emerging markets. Their use by governments can be warranted by the bonds' accomplishments in private sector issuances.

The price stabilizing properties identified by Merton (1995) and Neftci et al (2003) can be implemented to reap the convexity gains of trading in highly volatile

emerging markets. It is against the government's interests if a puttable *Sukuk* certificate is exercised. Thus, another advantage of puttable structures is that after the issuance of such certificates the government will ensure that their economic position is sound so as to be able to honour future commitments in the event that such a put option is exercised. However, puttable and callable structures inherit the possibility that traders of such certificates will try to exploit the price volatility of the underlying bond so as to increase their likelihood of exercising the options.

In well developed conventional markets, futures contracts on bonds can be employed to transfer interest risks. The hedger of the cash position must decide what the effect of changes in interest rates will be on the open position. A depreciation of spot value with an increase in interest rates will necessitate a short position in interest rate futures contracts. If interest rates do subsequently rise, profits will be achieved on the fall in futures prices. Conversely, an expected decrease in interest rates will necessitate a long position in futures contracts. The value of these will appreciate and their prices will increase. Subsequently, the hedger will benefit from a profit. The futures contracts come in a variety of standards such as T-notes with maturities ranging between 2 and 10 years as well as T-bonds, T-bills and Eurodollars. The challenge for the hedger then becomes to identify the nature of future contracts to invest in as well the amount of contracts to buy.

Previously we introduced the structure of zero-coupon *Sukuk* as a *Shari'ah* compatible debt finance instrument. Unlike traditional zero-coupons, the limitation of the zero-coupon *Sukuk* is that these are not tradable in secondary markets because of *Shari'ah* restrictions. As a result, these instruments face serious liquidity issues and cannot be adjusted to the variations in market conditions such as prices, interest rates and exchange rates. Hence, investors in these assets are exposed to serious market

risks. Unless these market risks are mitigated efficiently, the *Sukuk* markets will face stark challenges in competing with the traditional bond markets.

The impending task is how to manage these market risks inherent in the zero-coupon *Sukuk*. It would be prudent to avail from current advancements in knowledge and technology. In conventional financial markets the embedded call and put option features of bonds as well as fixed-floating rate swaps play an important role in mitigating market risks of debt instruments in two important ways. First, these ensure a wider flexibility of financial instruments to market conditions and hence improve liquidity of assets by enhancing the prospects of re-pricing from the perspective of the issuing companies. Re-price-ability of an asset facilitates its protection against price risks. Second, investors obtain a safeguard against risks when they purchase any of these bonds. If the market price of the issuer's stock rises, the value of the embedded convertible bond goes up. If the market price of the stock goes down, owners of the convertibles lose nothing as the down sides of these assets are protected by the debts. The *Sukuk* structures can advantage by adapting the premises of these instruments due to several reasons.

i. The instruments contain non-detachable (embedded options). Embedded options provide some of the useful functions of options *without creating derivatives* such as detachable call and put options and trading in them.

ii. These allow conversion of debts into real assets and usufructs which is permitted by *Shari'ah*. By developing the idea of converting debts into real assets and usufructs the liquidity of the zero-coupon *Sukuk* can be enhanced.

iii. The genuine risk management aspects of this can emerge as immensely important in developing a sound and competitive *Sukuk* market having considerable positive implications for economic development.

5.2.3. Islamic Embedded Option

Shari'ah guidelines do not allow the sale of debts but it allows the exchange of debts for real assets, goods and services**.** Thus, the opportunity of an exchange of debts against real assets and usufructs can be added to the debt certificates as an embedded option for the settlement of debts. Practically, the enterprise that would implement the funds would write the embedded option. Such an option would not be binding on the financier, but if utilized, the user of funds is bound by the promise.

Suppose firm A needs funds for the construction of a new apartment complex. A financier provides construction finance on the basis of *Istisna* at a 6% mark-up. Assume also that the total amount of debts amount to $100 million. These can then be divided into one million zero-coupon *Sukuk* of $100 each. A zero-coupon certificate will hence represent $ 94 of the principal amount and $ 6 of the mark-up. Suppose the zero-coupons are issued for 10 years.

The *Shari'ah* prohibits the sale of debts. Therefore, this financial asset has no secondary market. The zero-coupon needs to be kept for 10 years before it can be cashed for the $ 100. Hence this financial asset is bundled with a number of risks such as:

- *Liquidity risk*: The holder cannot cash his asset before the 10 years, so it is a very illiquid asset.

- *Reinvestment risk*: Due to the highly illiquid nature of the issued certificates, the holder cannot employ the asset to take up any superior investment opportunity.
- *Credit risk*: The credit risk of an instrument with a long maturity is always higher than one with a relatively shorter term to maturity. It is relatively easier to forecast what will happen to the borrowers' credit worthiness over, say, a 2 years period as opposed to his credit worthiness in 10 years.
- *Interest rate risk*: Once more, it is very difficult to forecast interest rates in the longer period as compared to a short period. The asset is a fixed rate built in the structure and thus the its interest rate risk with respect to floating market conditions is quite high.
- *Foreign exchange risk*: Again, it is difficult to forecast correctly the exchange rate during a longer period and hence the risk is high.

An embedded option will intriguingly transform the risk scenario of the zero-coupon *Sukuk* certificate. Suppose the constructor writes an option on the certificate that if the holders of the certificate wish, starting from the second year, (the completion of the construction) the holders can purchase apartments or acquire apartments on leases utilizing their zero-coupons. For example, the rent of an apartment of this building may be $ 3,000 per year. A person holding zero-coupons worth $ 3,000 can acquire an apartment for a one year rent after 2 years instead of waiting for 10 years to cash the zero-coupons. In the same manner, the investor can buy an apartment if he holds zero-coupons worth the price of an apartment.

It should be noted that the embedded feature in this case is a *call option* on the new assets of the construction company. A resolution of the OIC *Fiqh* Academy does

not allow the *trading* in options. Hence, this call option cannot be detached and sold independently. Therefore, no derivatives are created.

However, the embedded call option alters the nature of all the above risks that were previously bundled with the zero-coupons. The down side of the investments are by default protected by the fixed mark-up of 6%. Additionally, the entire nature of the certificates changes depending on the performance of the new construction. These become more attractive, as anyone holding zero-coupons will benefit from the call option. The zero-coupons can easily be liquidated at their face value, which is allowed by *Shari'ah*. Once the call option is utilized, the interest rate risk, reinvestment risk, credit risk and exchange rate risks are all isolated. Indeed, the financial asset is transformed into a real asset with different risk characteristics.

The embedded options can be additional with most Islamic financial contracts like leasing, instalment sale and *salam* contracts. Moreover, different varieties of options can be added with the different contracts. For example:

- The zero-coupon holders may be given the option to exchange their certificate for a suitable amount of output of the company, depending on the nature of the company and output or for the common stocks of the company, if the company or its subsidiaries are listed;
- The certificate holders can *put* back the certificate and rescind from the contract during a specified time period prior to maturity and the company can *call* back the certificate during a specified time period prior to maturity.

5.2.4 Floating to Fixed Rate Swaps of Sukuk

A swap can be simply defined as an agreement between two enterprises to exchange cash flows at some pre-determined time in the future. This agreement will cover the nature of the cash flows to be exchanged and the timing of the cash flows which are contingent on the valuation of future market variables. The simplest form of a swap is a "plain vanilla swap" where firm A agrees to pay firm B's cash flows at the same currency on the same notional principal over the same period of time. There are also currency swaps, where two firms exchange interests and principals in different currencies.

Interest rate and currency swaps entail a certain degree of credit risk that the financial institution is exposed to only if the value of the swap to it is positive. However, if the counterparty defaults and the value of the swap is negative to the financial institution then the institution realizes a profit as it will be rid of a liability. The potential losses from defaults on a swap are much less than the potential losses from defaults on a loan with the same principal. This is derived from the fact that the value of the swap is also much less than the value of the loan. The dimension of credit risk is essential in the pricing of swaps. The value of a swap with an institution that has a high credit rating should be greater than the value of a swap with an institution that has a lower credit rating. As the capacity of over-the-counter market trading has augmented, it has become increasingly essential for analysts to take potential default losses into account in the pricing and risk management of derivatives.

A swap is an exchange of liabilities and obligations. The impending issue is whether it is acceptable in the *Shari'ah.* The answer is that this question has not been completely addressed so far. It is understood that swaps involve interest-based

instruments and hence are not *Shari'ah* compatible. We propose the following possibility of a swap for the consideration of the *Shari'ah* scholars.

We have already described, a) a floating rate *Sukuk* (FRS) and b) a fixed rate zero-coupon embedded *Sukuk* (ZCES) based on leasing and *istisna* transactions respectively. We know that the FRSs represent ownership in rented assets and/or of usufructs of assets hence are tradable in secondary markets. The ZCESs, on the other hand, are debt instruments that cannot be traded on secondary markets. However, the ZCESs are exchangeable with real assets, goods, services and stocks of companies. Hence, the ZCESs are exchangeable with the FRSs in compliance with *Shari'ah* given the condition that they are of identical face values. If the face values of the FRSs and SCESs are not identical, the discrepancies will have to be adjusted by cash payments. For example, a FRS with face value of $100 is exchangeable with a ZCES worth $105 under the condition that the additional $5 is adjusted by cash payments. Accordingly, we can establish a basis for a *Shari'ah* compliant fixed and floating rate swap.

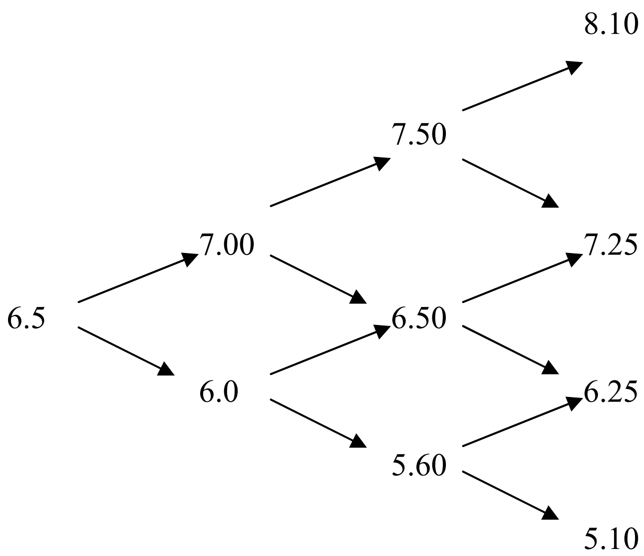
5.2.5. Pricing of Sukuks With Embedded Options

Embedded option bonds can be valued similar to the valuation of options on equities implementing binomial trees. In conventional bond issuance the value of the underlying assets will depend on the level of interest rates. In Islamic contracts interest rates are substituted with the rate of return on the underlying assets. We can analyse the valuation of embedded options using altering scenarios in a tree diagram.

Assume that future one-year rates of return develop as follows:

YEAR 0 1 2 3

Rates



The represented tree can be utilized to value zero coupon certificates of various maturities. For example, the value of a 1-year zero coupon bond at time 0 is

B(0,1) = 1/1.065 = 93.89 % of par value

The value of a 2-year certificate at time 0 can be determined using the same discount mechanism. The value of a 1-year zero coupon at time 0 can be calculated as:

If r= 7.00 → 1/1.07 = 93.45% of par value
If r= 6.00 → 1/1.06 = 94.34% of par value

Consequently, an investor who owns a 2-year zero coupon knows that the investment will be worth either 93.45% of par value of 94.34% of par value in one year. If the probabilities of the two scenarios adjusted for risk are known then the investor can value the two year zero coupon bonds accordingly. Assuming 60 percent for r=7.00 and 40 percent for r=6 we can deduce the value of 2-year zero coupon bond to be:

$$b(0,2) = 1/1.065 \times [(0.6) \times 93.45 + (0.4) \times 94.34] = 88.0807\ \%\ \text{of par value}$$

The valuation of callable bonds will invoke an adjusted method as the callable bond is essentially a portfolio of a non-callable bond and an American call option written with the non-callable bond as the underlying and a strike price that is given by the call price. Accordingly, at each node of the tree the value of the bond can be given as follows:

$P = 1 + C$	at maturity
$P = \max [\ CP, (1+C)/(1+r)\ ]$	one year prior to maturity
$P = \max[\{CP, 0.5 \times (Pu + Pd) + C\} \div (1 + r)]$	more than one year to maturity

CP	= price of the option
C	= coupon
r	= rate of return
P_u	= value of the certificate in one year if return goes up
P_d	= value of the certificate in one year if return goes down

VI
CONCLUSION

In this research we discussed and analyzed a number of issues related to the evolution, underlying principles, structures, risks and competitiveness of *Sukuk* as *Shari'ah* compliant substitutes to traditional fixed income financial assets. It is expected that Sukuk will encourage many Muslims world-wide to participate in financial markets and hence will be instrumental in expanding and deepening these markets, particularly in the emerging countries. There are other benefits of Sukuk for the economies and financial markets in the sense of more discipline and more financial stability.

The market for *Sukuk* certificates continues to grow and an important facet of this growth is the increased number of sovereign issuances typified by those issued by Malaysia, Bahrain and Qatar and, interestingly, Saxony-Anhalt in Germany. These certificates are appealing to global investors without having too much bearing on the underlying 'Islamicity' of the certificates. Accordingly, Islamic secondary markets receive a boost because such sovereign issuances and the subsequent attraction of global investments encourage increased corporate confidence in their private issuances. Nevertheless, *Ijarah Sukuks* continue to prevail as the most popular manifestation of *Sukuk* certificates. This is largely in part to their unambiguous *Shari'ah* conformity and familiar leasing formulae. However, leasing contracts on underlying real estate properties cannot single-handedly support the growing diversity of *Sukuk* investors. With increased global investors there will be a myriad of investment needs and thus other avenues of *Sukuk* issuances should be implemented to satisfy these demands. *Istisnaa*, *Mudarabah* and *Musharakah* certificates are

established as part of the AAOIFI standard and can be garnered to offer a plethora of *Sukuk* structures. The recent *Sukuk* issuance by the Islamic Development Bank serves as an excellent case study in this regard with their *Shari'ah* compliant diversity of investments.

With the rapid emergence of *Sukuk* markets, risk management considerations have also come to the vanguard of the industry. Novel financial instruments bring with them original financial risks. An analogous situation represented itself in conventional financial markets in the early 80s with the emergence of interest rate derivatives to hedge against the financial risks of bonds. With the globalization of financial markets and increased convergence of Islamic finance and conventional markets, indirect interest rate effects as well as other financial risks will necessitate the development of Islamic financial risk management techniques. Derivatives are inherently against *Shari'ah* considerations because of the uncertainty associated with them that amounts to *Gharar*. However, we have discussed the possibility of extending the functions of embedded options to fit the needs of *Sukuk* certificates and *Shari'ah* considerations. This facility provides a debt structure framework that helps replicate the functions of traditional instruments and in turn benefit from the convexity gains of these instruments. Neftci and Santos (2003) identify two major hurdles in emerging markets for acquiring convexity gains. Firstly, there are no markets for liquid interest rate derivatives. Secondly, interest rate fluctuations lead to significant increases in credit risk and lower the bond's price. Accordingly, investors in emerging markets suffer from the negative effects of volatilities but cannot benefit from the positive effects. Such benefits have been garnered in conventional emerging markets such as Brazil where interest rate volatilities in the 90s warranted a protective cushion against these fluctuations in the form of puttable and callable bonds. These

debt structures can be transferred to the *Sukuk* issuances in accordance to outstanding *Shari'ah* concerns.

Investors in conventional markets have also garnered the positive effects of swaps between different interest rates, exchange rates and between floating and fixed rates. Again, the feasibility of swaps in Islamic markets has been in contention as they are deemed to contravene *Shari'ah* considerations. However, the emergence of *Sukuk* certificates as mechanisms of liquidity management presents a novel asset-backed securities structure that can set the foundation for supporting risk-management derivative instruments. Our discussion centred on the viability of a swap between floating rate *Sukuk* (FRS) and fixed rate zero coupon embedded *Sukuk* (ZCES). Needless to say, the limit is not here.

Sukuk markets will only continue to grow and they have created the first genuinely global convergence between conventional finance and Islamic finance. A greater pool of investors is attracted to this component of Islamic finance because of the relative simplicity of the issuances and similarity between conventional fixed income securities and *Sukuk* certificates. Adequate risk management techniques will foster this growth and enable to satisfy a greater variety of investment appetites. The recent successes of sovereign *Sukuks* have encouraged corporate placements and with it a growth in secondary markets. To Islamic institutions, *Sukuks* provide for enhanced liquidity and balance sheet mechanisms. Previously untapped funds are now mobilized. As far as conventional investors are concerned, *Sukuk* certificates are another avenue to reap global diversification benefits and recycle previously idle Islamic assets and funds. The main functioning notion for the development of *Sukuk* markets is the belief that Islamic financial instruments can familiarize with conventional capital market systems. Reflecting this is the conception that *Sukuks* can

mimic features of bonds and profit from modern advancements in conventional asset backed securities markets.

Indeed, *Sukuks* provide an important research agenda for the future. Our research only partially covers some of the important points. There is more work to be done and these topics can be expanded upon in further studies.

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